A Consolidation of
FIRE AND WATER ENGINEERING *and* THE FIRE ENGINEER

AUGUST 25, 1926

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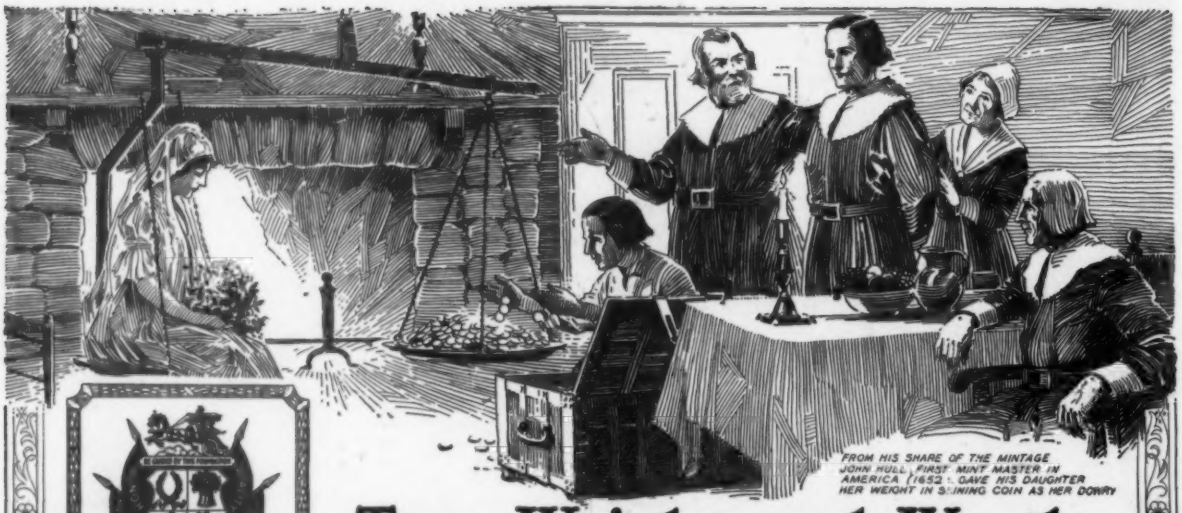
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JOHN HULL, FIRST MINT MASTER IN
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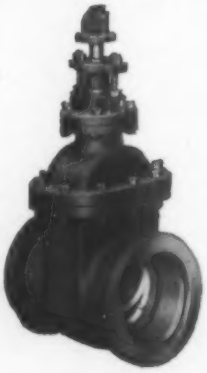

Ease of Operation—the compound equalizing wedges are released with the first turn of the stem, and permit easy withdrawal of the discs. On closing, the discs are lowered until opposite the seats before spreading of wedges forces them squarely against seats.

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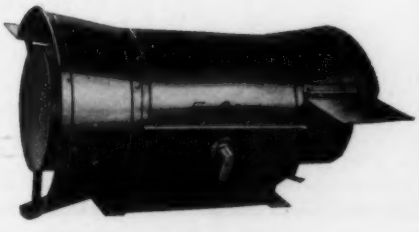

The Journal of the Fire Protection Profession Since 1877

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

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We Hear from Bradford

THE mail the other day brought us this gem of airy persiflage:

Dear Sirs:

I note your suggestion not to bother writing a letter,—"Just return this bill with remittance folded inside"— Personally, I think your suggestion is fine—I always thought it was a fool idea when sending a check to tell the person to whom your letter is addressed to—"Enclosed please find check"—Unless the person receiving the letter is blind, they surely will find the check— Then again, you don't care a cuss about our pure mountain spring water; it does not interest you whether we have a couple of cannon in our park or not—

I might write to you of our Italian Sunsets but what in Sam Hill does George Kuss know of sunsets—He couldn't distinguish an Italian sunset from the Harp of Ireland—Although the sky line that surrounds the City of Bradford on every side is of nature's own handiwork—not hand made like the sky line of your Big Village, I could not interest you in this—If I should write to you concerning the glistening dew drops originated in Bradford, Pa., it would not give you the faintest thrill—If I should write you relative to our fire department, which is conceded to be without equal in the U. S., you would no doubt sneer and say to yourself, this mutt is a nut—

So after due consideration I will follow your suggestion and refrain from writing you a letter—I'll just return this bill with remittance folded inside and let it go at that—

Respectfully yours,
C. H. HENDERSON, Bradford, Pa."

Thanks for the check, Brother Henderson, and the buggy ride!

The Publishers

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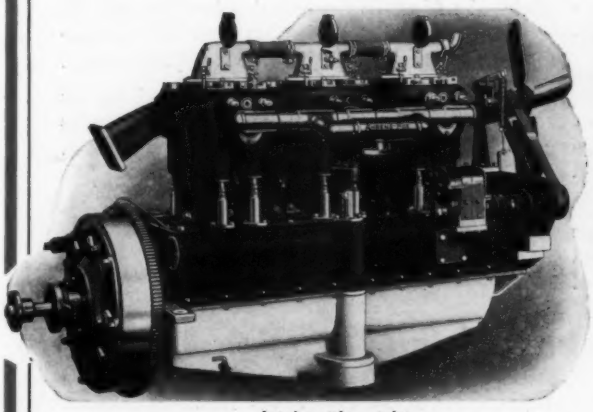
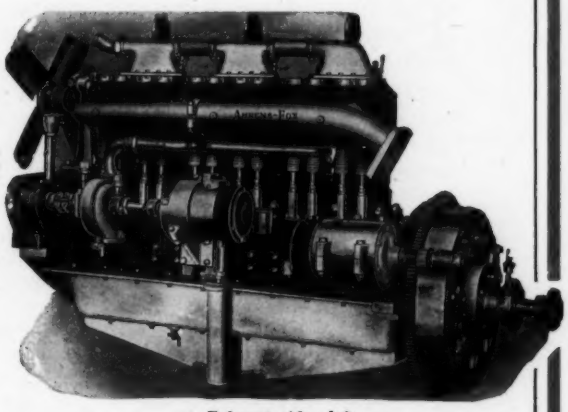
Ahrens-Fox



Intake side—right



Exhaust side—left

Super-Powered Motor

was Designed by Fire Engineers

"IT'S the motor that counts," is a phrase used by nearly all progressive fire officials. They realize that where a long run is called for and where you are forced to deliver hundreds of gallons of water per minute under high pressure—the brunt of the work falls upon the motor. It must not skip or fail—it must **deliver.**

The close contact of Ahrens-Fox engineers with actual fire service conditions and long experience in designing apparatus to meet these conditions thoroughly qualifies them to furnish municipalities with apparatus equipped with a motor of proven dependability and unquestioned service qualities.

Fire officials who realize the responsibilities of their positions and their duty of protecting the life and property of their town or city as far as humanly possible, know that quality and service are far more important than any other consideration. The cost of your apparatus is measured by service rendered over a long period of years, and not by the initial cost.

Hundreds of municipalities throughout the country who are fortunate in having such officials in charge of their fire departments are now equipped with Ahrens-Fox apparatus. Others are planning to make such purchases in the near future; and if you are interested in up-to-date fire apparatus we shall be glad to send complete information without obligating you in any way.

"Nothing is too good for fire service,
and nothing but the best will do."—Ahrens-Fox

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"Builders of Quality Fire Apparatus"

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New proofs of leadership

FIRE protection developments important to every municipality and every business enterprise are presented on these pages.

1. Exhaustive public tests, pictured in part below, have again demonstrated the supreme efficiency of genuine Firefoam, from *Foamite* equipment, on both extra-hazardous fires and ordinary fires.

2. Recognizing the broad practical knowledge that Foamite-Childs Corporation has acquired through years of experience in the municipal field, the Amdyco Corporation has arranged to market and service their "Amdyco" dry powder foam generator through us. See opposite page.

Write for further information—and let us send you catalogues of *Childs* Motor Apparatus and *Foamite* equipment for Fire Departments.

FOAMITE-CHILDS CORPORATION
Fire Protection Engineers and Manufacturers
314 Turner Street, Utica, N. Y.
Sales and Engineering Representatives in the leading cities of all countries

Demonstrations of the remarkable efficiency of Foamite *equipment at the Manchester, N. H. Convention of the* N.E.A.F.C.

TEST No. 1

Gasoline pan fire, attacked with three different types of extinguishers by Chief John J. Hannigan, of Norwood, Mass.

The standard Soda-Acid extinguisher had practically no effect on this fire

The tetrachloride method proved as ineffective as Soda-acid

The Foamite *extinguisher put out the blazing gasoline in less than one minute*

TEST No. 2 (left)

Combination oil, gasoline and ordinary free-burning fire quickly extinguished with Firefoam from double-tank *Foamite* Chemical Equipment mounted on *Childs* Standard Triple Apparatus.

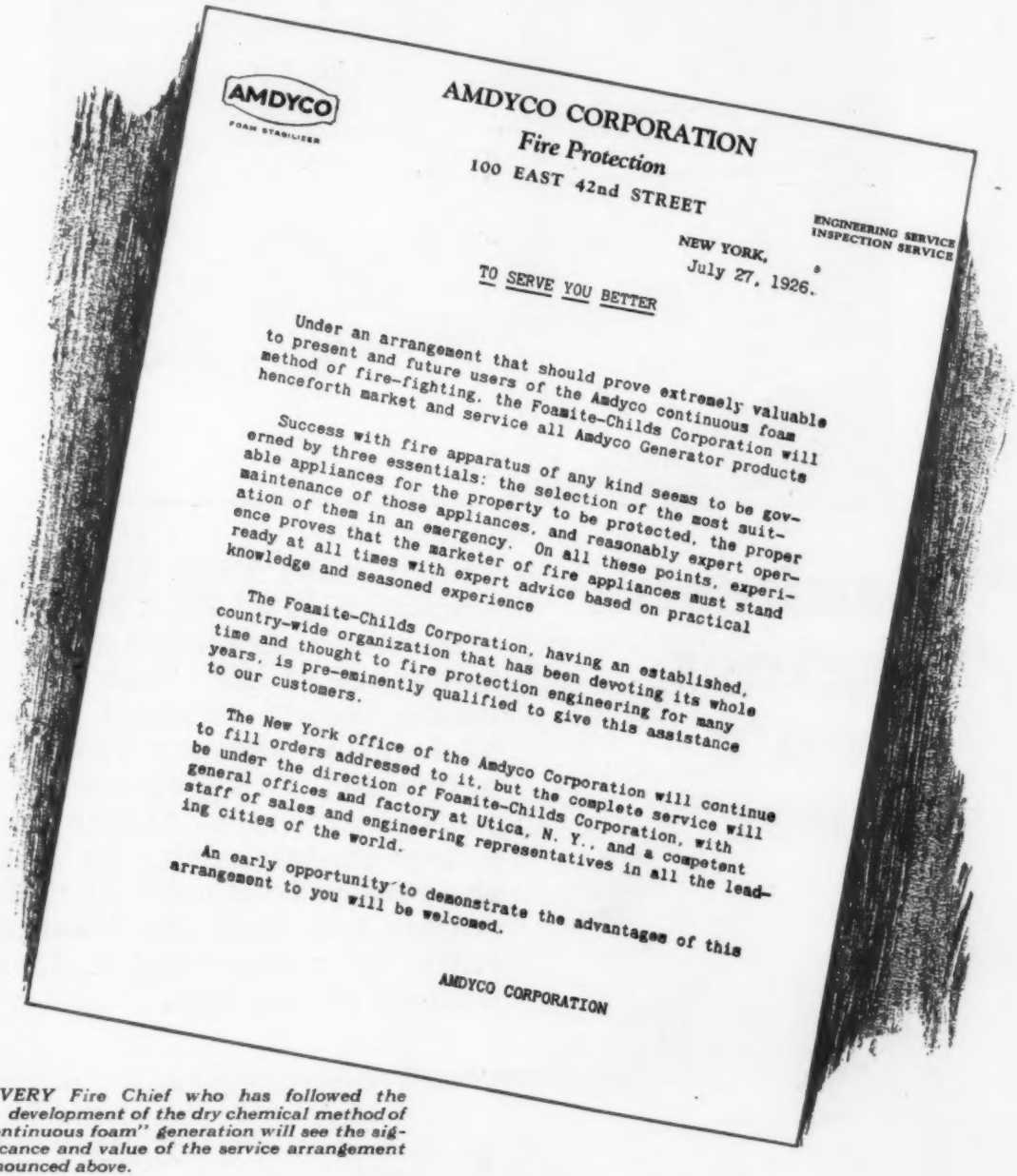
TEST No. 4 (right)

Pit of fuel oil, kerosene and gasoline, 30 ft. in diameter, extinguished in 1 min., 30 sec. by Firefoam produced by the new generator using dry chemicals.

Simultaneous pumping tests of six Childs *fire trucks at the Foamite-Childs plant, Utica, N. Y.*

In the picture are three *Childs* Standard Heavy Duty Motor Trucks and three *Childs* Pumping Equipments mounted on standard commercial chasses. Over 500 cities and towns are now using *Childs* motor apparatus, and over 800 Fire Departments have *Foamite* equipment.

in fire protection service . .



AMDYCO
FOAM STABILIZER

AMDYCO CORPORATION
Fire Protection
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ENGINEERING SERVICE
INSPECTION SERVICE

July 27, 1926.

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Success with fire apparatus of any kind seems to be governed by three essentials: the selection of the most suitable appliances for the property to be protected, the proper maintenance of those appliances, and reasonably expert operation of them in an emergency. On all these points, experience proves that the marketer of fire appliances must stand ready at all times with expert advice based on practical knowledge and seasoned experience

The Foamite-Childs Corporation, having an established, country-wide organization that has been devoting its whole time and thought to fire protection engineering for many years, is pre-eminently qualified to give this assistance to our customers.

The New York office of the Amdyco Corporation will continue to fill orders addressed to it, but the complete service will be under the direction of Foamite-Childs Corporation, with general offices and factory at Utica, N. Y., and a competent staff of sales and engineering representatives in all the leading cities of the world.

An early opportunity to demonstrate the advantages of this arrangement to you will be welcomed.

AMDYCO CORPORATION

EVERY Fire Chief who has followed the development of the dry chemical method of "continuous foam" generation will see the significance and value of the service arrangement announced above.

Foamite-Childs Protection

A Complete Engineering Service

Against Fire

Waukesha Engined Kenosha 500-Gallon Pumper at E. Moline, Ill.

"Waukesha Engines Don't Labor"

That's what Fire Chief, Paul Godesiabois of East Moline, Ill., said when describing the performance of the Waukesha "Ricardo Head" engined Kenosha 500-gallon pumper when it was delivering 743 gallons at 124 pounds pressure. Ample reserve power explains why no Waukesha "Ricardo Head" six cylinder engine has had the least difficulty in completing a 12-hour Underwriters' test.

All these Waukesha six cylinder pumper engines have ample power to handle overloads and run with unfailing reliability for days at a time when necessary. Write for "Ricardo Head" Booklet telling why this engine design gives more power.

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WAUKESHA MOTOR COMPANY

Waukesha Wisconsin

Builders of Heavy Duty Engines for Over Twenty Years

When Buying Fire Hose

Read
What we
Have to
Say—

then—

Listen to
What others
Have to
Say—

then—

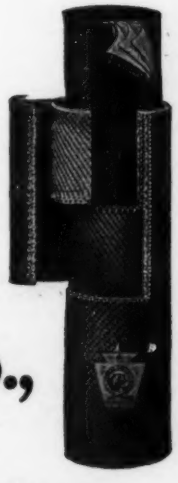
Do Your Own Thinking

WHEN you buy fire hose it isn't enough to know what the materials are. You have to know more if you want to buy efficiently and avoid the necessity of frequent repeat orders.

Here are the things you ought to know—

What is the exact quality of the materials used; and
How are these materials **combined** to make the hose?

Fabric Wax and Para Gum Treated, Cemented or Loose Inner Tube Fire Hose will not only stand the closest possible inspection inside and out, but we even go out of our way to explain to hose buyers exactly how it is made. Its many points of superiority, important points that you ought to know, are explained in an illustrated booklet which we will gladly send you on request.



~~Stands Every Test~~

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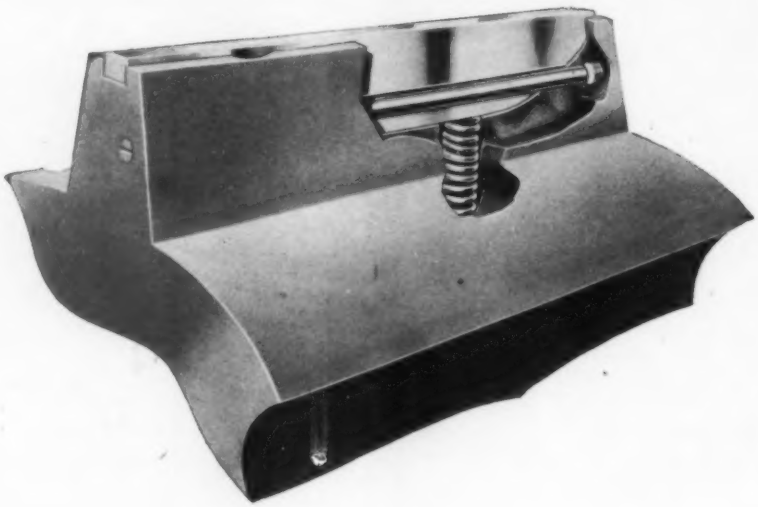

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The packing strip plays an important part in the remarkable performance of the Waterous Rotary Pump.

Forty years of rotary pump building have proven to us that the packing strip greatly increases volumetric efficiency, besides adding to the life of the pump.

Packing strips are so constructed that they are not affected by sand or foreign matter that might enter the pump.

The light sliding action between packing strip and pump barrel automatically compensates for wear at that point.

The average life of these strips is about seven years. Replacement of strip can be made in an hour, after which the pump is as good as new.

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Saint Paul, Minnesota

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Established 1886

Waterous
Dependable

FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Leading Journal of the Fire Protection Profession

VOLUME LXXIX AUGUST 25, 1926 NUMBER 16

"Shooting" Well Fires in the Oil Fields

Several Interesting Methods of Using Explosives in Extinguishing Gas and Oil Well Fires in the Fields

By DUDLEY W. MOORE*

FIRE chiefs who are entrusted with the care of oil fields, will be interested in this article which describes the methods of "shooting" such fires. Chiefs are supposed to know everything, and the information given will prove valuable.

The same principle used in blowing out a candle is applied in extinguishing oil and gas well fires. It is, of course, humanly impossible to blow out a roaring gas or oil well fire with one's breath, for something more powerful is needed to turn that trick. But the "super-breath" from a bursting charge of explosives, if properly placed, will do it; in fact, many stubborn gas and oil fires have been snuffed out in that manner in the mid-continent fields.

The explosives method has been more successful with gas fires than with oil fires, and here's why: The flame from a burning oil well shoots up from the casinghead in a solid, unbroken column of fire, which is difficult to snuff out. The flame from a burning gas well, however, does not usually start at the casinghead. For the gas issues from the casing with such velocity that it does not ignite at once; in fact, it may not burst into flame until it reaches several feet above the casinghead—and oil men call this space the "air pocket." It is of advantage in the snuffing process, for a well-placed charge of explosive set off there momentarily checks the flow of gas and disperses the flame above—and the fire, thus cut off from its fuel supply, burns out.

A Gas Well Fire on Property of the Wilcox Oil and Gas Co. in the Cromwell, Oklahoma, Field—Explosives Were Used to Extinguish the Blaze.

Gas Fire

A gas fire that burns straight up into the air in one column is easiest to control. Where the gate valve in the casinghead is wide open such a condition is met. But if it is partly closed, the conditions are favorable for a "cellar fire" which burns downward and spreads over the entire pit. In such a case the first thing to do, if possible, is to open the gate valve so that the full flow of the burning well can be diverted upward.

Gas fires often prove more stubborn than oil fires, but the forming of "air pockets," as previously explained, helps to extinguish them. These pockets are not always present and it is sometimes necessary to produce them. A single charge of explosive will usually do the work.

The explosive is always wrapped in asbestos to prevent premature explosure from heat. The charge is primed with an electric blasting cap which is connected with a blasting machine. The explosive is usually placed about three or four feet above the top of the casinghead, depending on the rock pressure of the well, whereupon the operator runs back to a safe distance, and sets off the charge. One shot, if placed right, usually stops the fire.

Some novel and effective methods are used in fighting gas well fires. In one case where it was possible to get fairly close to the fire, a cable supported by two small derricks with a pulley arrangement was set up over the casinghead. The explosive was placed in a bucket-like contrivance which was hooked on the cable so that it would slide back and forth. A clamp was fastened on the line to stop the container at the right place when it was slid down the cable. As planned, the charge was fired just above the casinghead.

Interesting records have been made on individual wells. In a 48,000,000-foot gasser of Johnson & Ashe, near Holdenville, Oklahoma, with 1,200 pounds rock pressure, there was no cellar and the following method was employed. Advancing as close to the fire as possible, the operator determined the height his shot should be placed. He then fastened a small box on the order of a bird house on top of a two-by-four of the proper length, connected up the wires and placed the charge in the box. Arrayed in an asbestos suit, he advanced to the casinghead, and stuck the two-by-four in the ground alongside, so that the box containing the explosive would be on a level with the base of the flame. Then, rushing back behind a hill, he turned on the current. An explosion followed—and the fire was out.

One of the most difficult fires to put out by the explosives method was the 100,000,000-foot gas well of Sartain Brothers near Bristow, Oklahoma. There was no cellar here but on account of the large flow of gas and enormous pressure, a different method was employed. A derrick of three 20-foot one-inch pipes in the shape of a tripod was moved up to the well and rigged up over the casinghead. The explosive charge was suspended six or seven feet above the casing by means of a pulley arrangement under the three legs of the derrick. Twenty "quarts" of explosive, in this case, turned the trick.

Blasting Better Than Steam

An instance of the superiority of the blasting method over the steam method was furnished a few months ago in the Indian Territory Illuminating Oil Company's fire near Pawhuska, Oklahoma. The well had approximately 700 pounds rock pressure, and was discharging about 20,000,000 feet of gas. Four steam

* Courtesy "The Du Pont Magazine"

A Burning Oil Well Near Torrence, California, which Caught Fire a Few Months Ago. Dense Masses of Smoke Rolling Forth and Flames Shooting High Into the Air Made the Conflagration Highly Spectacular. The Black Smoke Formed Huge Clouds That Obscured the Sun for Many Miles.

boilers connected with water lines played on the fire for several hours without effect. Using the two-by-four box arrangement, the explosive was placed, and the shot extinguished the blaze.

Fighting Cellar Fire

The methods of using explosives, of course, vary with different conditions. Sometimes a fire will burn from the casinghead, which in most cases is a few feet above the ground. When there is a "cellar"—and sometimes when there is not—a gas well will burn with the flame starting at the ground level. A condition of that kind was encountered some time ago on the property of the Prairie Oil & Gas Company. This well—it is in the Papoose, Oklahoma, pool—caught on fire at a time when it was making about 15,000,000 feet of gas.

In order to cope with this cellar fire several lengths of two-inch pipe were laid across the cellar to facilitate moving up the explosive charge and to give it support directly over the casinghead. Then a kind of box-sled was made and placed on the tramway. The explosive, wrapped in asbestos, was packed in the box compartment and after the connecting wires were attached, the sled was moved into position. About forty seconds later the sled was blown into a thousand pieces, but the fire was also snuffed out.

In fighting gas well fires the best practice is to open the gate valve first to allow the flame to shoot upward in one column. But that isn't always an easy thing to do. For instance, in fighting a fire on the Wilcox Oil and Gas Company lease in the Cromwell pool, the gate valve was nearly closed, but open just enough to force the flames downward into the pit, making it almost impossible for the shooter to get close to the well. He overcame this handicap, however, by using a specially shaped piece of pipe grooved to fit the valve openings, and thus diverted the flow of gas upward in full force. This accomplished, he prepared the explosive charge by wrapping it in asbestos, and then using the "box sled" arrangement just described, he slid the box to the base of the flame adjoining the gate valve and set off the charge just as it reached that point. Like blowing out a candle, the flame was immediately snuffed out.

Contrary to usual opinion, the explosives method does not injure the well or equipment. The "shots" are usually small and they are placed high enough above the casing to avoid damage to the casinghead.

Explosives Used With Success

Explosives have been used with success in small oil field fires. Nevertheless the conditions are different and the same methods used in fighting gas fires do not apply to most oil fires. Mud and water are still more effective on oil fires—but have little effect on burning gas wells.

In a fire on the Tidal Oil Company's lease in the Cromwell field, circumstances gave the water and mud method its chance, and it succeeded.

After playing steam from several boilers on this fire with no result, it was decided to try pumping water and mud through the flow line. A noose of wire was thrown over the oil saver valve and the valve loosened, thus permitting the oil and flame to shoot straight up. A rotary mud pump, hooked up to the slush pond, was used in putting out the fire in the pit. This made it possible to advance closer. Using a large steam pump and the mud pump, mud and water were forced into the flow line. When it was filled to the gate valve over the casinghead and the pressure equaled that of the well, the fire was put out.

Experiments are being conducted in the mid-continent oil fields to develop a method of using explosives that will be as effective in fighting oil fires as that now employed in extingushing gas well blazes. It is generally thought that such a method will be perfected before long.

Chief Boyd Receives Large Bequest

Chief Sam Boyd of Knoxville, Tenn., has been notified by the lawyers of a deceased relative, a Col. Caswell, that he is one of the beneficiaries according to the terms of the will.

Col. Caswell left an estate of $650,000 of which Chief Boyd will receive fourteen per cent or about $91,000. Most of the property of the late Col. Caswell is in bonds and Knoxville real estate.

How to Secure the Necessary Support

Each Administration Should Be Educated to Value of Fire Department—Public Makes Splendid Ally in Work

By J. H. SPEDDY, Chief of Fire Department, Lakewood, Ohio

THE fire department chief who has the periodic problem of trying to secure the necessary financial and moral support from the city officials, can profit from a perusal of the following article. The author stresses the necessity of the chief fixing the blame for large fire losses on some of the city officials, should they be responsible for a measure of the results.

Chief Joseph H. Speddy.

One of the most difficult problems that confront fire departments today, in the State of Ohio, is the securing of sufficient funds to properly and efficiently operate. This same problem probably confronts fire departments in other states as well as in Ohio.

Statistical experts advise us that financial and business conditions move in cycles, which is estimated to be every seven years. This has occurred, within recent years, in the various fields that have to do with the human race. The older men that are assembled here, today, are aware of these changing conditions that have occurred in their respective departments in the cities which they represent.

Evolution of Work

This evolution is happening in fire departments just the same as is happening in all lines of business. I doubt very much, whether there is a member of this association, present here today, who has not heard the often repeated saying, "Time and Tide Waits for no Man," and as we all know we can't stand in the way of progress.

Magazines, pertaining to fire departments, are published weekly and monthly and continually contain numerous articles, thoughts and suggestions covering every conceivable subject pertaining to the operation of departments in our respective municipalities, regardless of whether it be a rural community or a large city.

Fire Methods Not Improved

Only just recently, a prominent engineer of the National Board of Fire Underwriters who has had years of experience in the State of Ohio and who is taken as authority on fire insurance ratings, in a casual conversation, made the remark, "That while there has been a wonderful improvement in fire department apparatus and accessories, there has been very little improvement in fire methods." In his opinion this tends to show that in order to keep pace with the times it is just as necessary for each fire chief to adopt the latest and most up-to-date methods, of the use of the various apparatus and appliances, as it is for the manufacturers who produce the same; also such other methods as may be used to promote the advancement of his department, which of course necessitates the method of securing the proper moral and financial support.

Now the question arises, in the minds of many here assembled, that this all sounds very well for someone to make a lot of apparent vague statements, but the real question is, "how can it be accomplished?"

Last winter, at a meeting of your officers and board of directors, which was held in Lakewood, Ohio, one of the officers happened to see, lying on the writer's desk, a tabulated list of the appropriation of funds for the different classifications of the fire department for the year 1926, and he was evidently surprised at the amount. He made the remark, "how do you do it?" and requested a copy of the budget for his own information—this accounts for the title of the paper and the assignment, of same, to the writer.

Since the organization of our department, we have endeavored to keep in mind, that a fire department could be run on similar good business principals just as well as any other business or organization and today we have never seen any reason to cause us to change our opinion. One of the most out-standing obstacles, that prevent this accomplishment is politics. In order to prevent this, it is necessary for the department not to take part in any political questions of any description.

Merit System Must Be Used

The merit system must govern, beginning with the applicant's entrance into the department and must continue during his term of service. In other words, the elimination of politics must begin with the department itself. The foundation is laid when the public learn that the department is governed by merit system only.

The continued hue and cry of the average citizen, is for efficiency by public officials and the nearer you come to satisfying their demands, the better support your department will receive—it is simply a question of selling your fire department to your citizens by giving them the best possible service and this can only be accomplished by the intensive training of the members of the department. Discipline, prompt and efficient service to the citizens must prevail to off-set the general opinion of the public that a position in the fire department is a lazy man's job and that the department is made up of ne'er-do-wells or men who are failures in the average walk of life. This of course is not true.

Interest of Public

Just at this point in preparing the paper, one of Lakewood's most prominent surgeons came in and stated that the owner of a large residence, in which a fire occurred recently, made the remark to him that they were well pleased with the work of the department; particularly on account of the careful use of chemicals and water and the unnecessary destruction of the building that could easily be caused by the careless use of the various appliances, such as axes, etc. The compliment was also due to the fact that the surplus water, dirt and rubbish, occasioned by the fire, was cleaned up and the place left in the best possible condition.

Every city or village usually has a number of public spirited citizens who take an interest in civic matters, a Chamber of Commerce, a Board of Trade, Rotary Club, Kiwanis Club and usually a number of Fraternal organizations and last, but not least, public schools and in the larger communities, the newspapers.

These various organizations are always interested in anything that is a benefit to the community in which they serve and they will usually get behind and boost any movement that has merit for their best interest. Frequent talks before school children will be carried home to their parents.

At the end of each year, funds received from taxation are appropriated for the operation of the entire municipality for the ensuing year. When these funds are ready for distribution, the question arises, what department needs it most and how will it be apportioned to each department of the City Government. Men elected to public office usually will endeavor to do the things most spectacular to the public and will frequently favor

"The problem boiled down, simply resolves itself into a continued process of educating every administration to the importance of fire prevention and fire protection. The public is becoming exacting and it is possible to secure the moral and financial support of your citizens."

that particular department and in consequence, some of the city departments will run short of funds.

In my opinion, very frequently, it is simply a question of salesmanship and the department head who can best sell the idea of the importance of his department, to his superiors, is the fellow that usually obtains results. The chief who sits back and thinks that "all comes to he who waits," ordinarily does not obtain very much consideration.

Need of Salesmanship

This point was brought, very forcibly, to my attention just before January 1st of this year, in one of the prominent cities in the State. While visiting this city, during the holidays, I read a newspaper article stating that this particular city was approximately fifty thousand dollars ($50,000.00) short in making up their budget for the coming year and it was suggested that the police department appropriation be cut accordingly. Immediately there was a great hue and cry against the plan, as this particular police chief had so sold his department to his citizens, that their protest was of such effect that the suggestion was not followed.

While in the city, I called on this chief of police, who was a friend of old standing, and in the course of conversation this subject came up. He informed me that similar methods were used by his department to obtain the support of the public.

After I left the city, I noticed an article in one of the magazines that the fifty thousand dollars ($50,000.00) was taken from the fire department appropriation and in consequence thirty-nine (39) firemen were dropped from the pay-roll.

Large Amount of Apparatus Purchased.

In support of this idea, in fact in our own State, a great number of villages, of just a small population are purchasing modern up-to-date fire fighting equipment, wherein a few years past, it was an unheard-of proposition. It is within reason to presume that maybe an apparatus salesman, a representative of the Underwriters' or the State Fire Marshal—in fact someone sold them the idea—it is self-evident that it is not an impossibility.

Very frequently, in your suburban communities adjacent to some of the larger cities, real estate salesmen will present among their arguments to their respective purchasers, that modern fire department service is a very valuable asset.

The average man in business, and the home owners that go to make up a community, are always interested in a "Dollar and Cents" proposition; in fact, they always can talk in that language.

Placing Idea

In order to place this matter intelligently before them, we would suggest that you request a survey to be made by the National Board of Fire Underwriters or by the Ohio Inspection Bureau, depending of course upon the size of the municipality, which request is usually granted. You can also make a similar request of the State Fire Marshal to render such assistance as may be needed to present this matter before your own citizens, in order to obtain the necessary support, and usually the officials are only too pleased to grant your request.

After the survey is made, by the Underwriters, you will be furnished with a detailed list of recommendations and they will show you in dollars and cents, the saving to your citizens in fire insurance ratings. In this connection, it is well to bear in mind that in the case of a loss in a business of any description, fire insurance policies do not cover the loss of business or the loss in employees thrown out of employment in the case of fire, and while the building is being rebuilt.

Fire insurance policies do not cover the loss of the many keepsakes in the home that are dear to the hearts of every person upon which a dollar value cannot be placed. As a rule, public officials do not desire to be held accountable for the loss of lives and property that may occur for their failure to act upon recommendations made by recognized authorities upon the proper and continued presentation of the facts.

Safeguard for Chief

The fire chief, who persistently places these facts before them and places himself on record, cannot be held responsible for the failure of public officials to present the data to their citizens for their approval and for the failure of the citizens to vote and carry the bond issue. Usually, public officials do not wish to hold the bag, and they will invariably be influenced by public opinion.

Generally, when a conflagration occurs, attended by loss of life and property, the question is invariably raised by the public, as to the cause and where to place the responsibility. Usually there is an investigation, a wild scramble among public officials to get out from under, and if the fire chief does not amply protect himself by showing that he has gone on record by making the necessary recommendations, he usually will be held responsible.

The deficiency of the National Board of Fire Underwriters has a maximum total of five thousand (5,000) points, distributed as follows, in the order of their importance: Water supply, 1,700 points; fire department, 1,500 points; structural condition, 700 points; fire alarm, 550 points; hazards, 300 points; building laws, 200 points; police, 50 points.

Value of Survey

As fire hazards are increasing and conditions continually changing, and as this new schedule of rating has become effective, it would be well that you have a survey made at the earliest possible date, in order to know your exact classification.

When this survey is completed, you will then have a ground or floor plan from which to commence to build or improve the conditions in your city. It not only enables you to check your own department, but also the various departments of the city, which have to do with this schedule. Very frequently, it may happen that your own department will hold its classification, but some other department of the city government will be so far below the required standard, that when the average is taken, it will lower your classification.

Such being the case, you can start to bring up your own standards as well as to suggest that such points of deficiency that may exist in other departments, be overcome.

The mayor, safety and service directors and members of the councils, are usually very anxious and willing to listen to any constructive suggestions that will be beneficial to the citizens in the community in which they live. That is the best kind of politics and they fear adverse public opinion.

In the State of Ohio, owing to its Civil Service Laws, it is not an uncommon thing for a fire chief to serve over a long period of years, irrespective of the two-year periodic change in administration.

Chief May Become Discouraged

It is not difficult to understand the many discouragements that confront the average fire chief. In some cases after working many years to perfect his organization, he is confronted by a new administration that are not familiar with conditions which necessitates the continued education or familiarizing them with the facts and needs of the department—in other words it virtually means starting all over again.

In the average corporation, officials remain year after year and once an efficient policy or the proper procedure is established, the organization becomes very efficient, because the policy is not continually changing every two years.

This subject, boiled down, simply resolves itself into a continued process of educating every administration to the importance of fire prevention and fire protection.

To illustrate the point in question, a very prominent man wrote an article in which he said: "Breaks come to the chief that goes out and makes them."

Getting the breaks is just a matter of a chief keeping his head up and staying in the game every minute without a let-up. I don't care who the chief is, big or little, the fellows who have their heads up and keep trying, are the fellows who get the breaks. They are the fellows who win in the game.

Public Can Advertise

The public are becoming more exacting every day, and it is not beyond a possibility that by a conscientious, efficient, progressive and persistent effort on the part of every fire chief present here today to give his community the best possible service to which they are entitled, that it is possible to secure the moral and financial support of your citizens.

Covering a period of years, my observations have been that the old maxim, "Quality remains long after price is forgotten," still holds good. It is a very frequent incident for a taxpayer to speak in the highest terms of beautiful public buildings, such as schools, churches, city halls, court houses, libraries, club houses, monuments, parks, beautiful residences, factory buildings, fire and police departments. To verify this statement, is it not a fact, that when an out-of-town visitor comes to your city and your Chamber of Commerce or Board of Trade, wishes to advertise the advantages of your city, they point out the most outstanding feature of public or private achievements. Why not your fire department?

In conclusion, the average taxpayer rarely complains when he receives a dollar's worth of service for each dollar of public money expended, but he does object very strenuously when he pays out two dollars and only receives one dollar's worth of service.

Public funds, judiciously distributed and expended, and efficient service rendered, will always receive the support of the citizens in your community.

Modern Fire Alarm Signalling

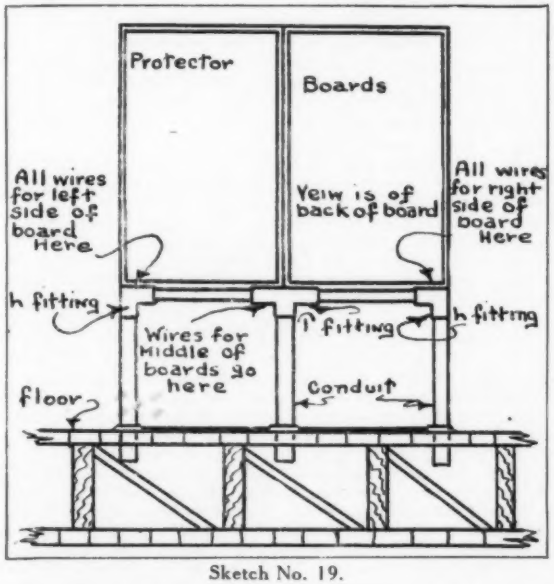
Protector Switchboards—Their Installation, Operation, Maintenance and Repair

By E. W. KEIRSTEAD, E. E.

THIS is the eighth of a series of articles on the care, installation and repair of various phases of fire alarm work. The author has had practical experience in this field, and he will answer questions on this subject that are submitted to him by the readers, free of charge. The only condition is that a stamped envelope must be enclosed for reply.

Description of Protector Boards

All protector boards are primarily used for the protection of the different circuits from static electricity, sneaks, lightning, high tension currents and all of the different abnormal currents that are to be encountered in actual every day operation of a modern fire alarm office. Some protector boards have in addition



Sketch No. 19.

to the protective devices, other features to control the apparatus such as repeater cut out switches and repeater gang cut out switches by means of which it is possible to place the repeater in a series or parallel positions, or cut it out of the circuit altogether. Small offices have this apparatus mounted on the storage battery switchboards. A ground test switch is also located on the protector board to measure the resistance of the ground or the circuit as required. The method of locating grounds will be given in this article a little farther on.

Repeater switches are not installed on protector boards for large offices as there is no use for a repeater in large central offices. The necessary apparatus on a central office type of protector board is composed of the following units: ½ and 1 ampere fuse for each circuit; plush protector and argus coil for each circuit or a vacuum type arrester; combination pin cut out switch; continuity test jack, voltmeter, ground test switches and suitable switches to control the voltmeter. Some boards are equipped wih a vibrating bell and red light to give a visual and audible signal of trouble on a circuit.

Protector boards for small offices have the same apparatus mounted on them as the large boards, and in addition if there is need for repeater switches, these are also placed on the board.

It is from this board that the condition of the outside and inside lines are learned, and it is the center of operations in case of trouble. You can all see the necessity of keeping this one board in first class shape at all times.

Installation

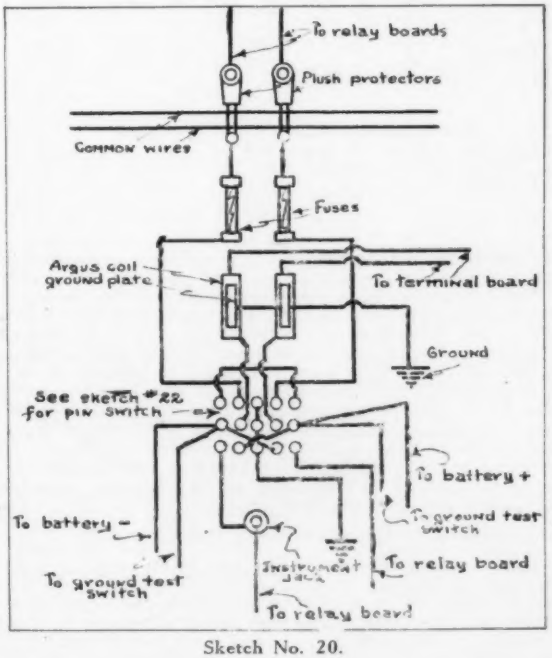
When the protector board is ordered it is wise to purchase one with a few spare circuits even if they will not be used for a period of a few years. This is to avoid having a large and a small board in the same office. When dissimilar boards are used it ruins the entire appearance of the office. The average life of a board of this type is about fifteen to twenty years, the time being in proportion to the care and service given to it.

When installing a protector board do not, unless absolutely necessary, line it up with the rest of the boards in the room. The best place to place the protector board is at the head of the room or in a position where it will be by itself. It will be well to allow enough space in front of the board to place a good size table. The table will be used to place the map and other equipment when it is necessary to make a test or do other work. It has become a habit with some operators and linemen to use the slate or marble shelves to write on or sit on—it is poor practice to do so as the shelve will break and leave an ugly reminder of the fact.

These boards come drilled for the necessary holding bolts and are set up the same as all other types of boards are installed. A type of conduit arrangement for a protector board is shown in sketch No. 19 and can be varied according to your demands.

There are a great number of wires terminating at the protector board and some arrangement must be made so as they can all come to their proper places. The switchboard frame is first set up and squared up properly before the board is placed in position. When the board is placed secure and tightened up fairly tight; then back the nut off one half turn. If it is tightened too tight the slate will crack and make the board worthless. When you place the voltmeter on the board be sure you hook it up as marked as failure to do so will place the voltmeter in a reverse position and it will be impossible to make a correct test.

When you start to hook up the lines to the protector board be sure you put the wires on as marked on the print and the board. It will be well to see that the print and the board correspond as it is sometimes possible that a mistake has been made, and if the board is hooked up as shown on the print, it may be wrong.



Sketch No. 20.

Wiring on the Board

In figure No. 20 wiring of a protector board is shown for your benefit in tracing out the wiring. This print should not be used to correct the troubles on your own board as there are a great many different types and ways of wiring a protector board. It is given here to show the elementary circuit of one type of board.

Only one circuit is shown here and it will be easy for any

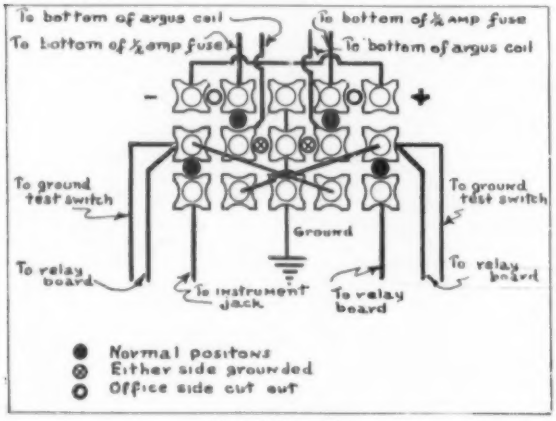
one to trace it through and see where the circuit enters and leaves the board—where the pin switches are cut in, etc.

The voltmeter shown in this print is a 0 to 50, 0 to 150 center poise meter and the resistance is 20,000 ohms. In a 150 volt, straight voltmeter, the resistance is about 15,000 ohms. This board is of the plush protector type and has an argus coil type lightning arrester.

As explained before, the protector board is used for the protection of the circuits and for a test panel. We will trace out the wiring of the particular print shown here. I will caution you again to use the prints shown here only for instructive purposes and never to use them to correct troubles on your own installations.

Wiring on Back of Board

Our outside line comes into the board from the cross connecting or terminal board and goes to the top stud of the argus coil it passes through the argus coil and runs down to the middle position of the pin switch in column 4. You will see a plug or pin connecting the middle position with the top position on column No. 4. This carries us to the top position of the pin switch. From here the circuit goes up to the ½-ampere fuse, bottom position, and goes through the fuse continuing on through the plush protector and going, in this case, to the relay board or box board as it is sometimes called. We now trace the wire coming back from the box or relay board and find it goes through the plush protector the fuse and down to the top position of the pin switch in column 2 and on out on the line. Our battery and ground test lines come into this same



Sketch No. 21.

pin switch and it is shown in a larger view so as you will be able to figure out the different ways of arranging this feature.

Please remember when you are following out the wiring of this board that it is one that would be placed in a large central office. The fuses used on this board are of a ½-ampere and 1 ampere rating and you should always have a good supply on hand at all times. The argus coil should be adjusted so as to have the coil 18 to 22 thousandths of an inch from the ground plate to the coil. Keep a good pair of rubber gloves which have been tested for breakdowns at hand to use when you are replacing any blown fuses or correcting trouble on this board. Although a man has not been known to have been killed at this board it is possible to have some real high currents come into this point especially during thunder storms.

Use of Protector Boards

If a circuit should open either outside the office or inside, you will be informed of the fact by the stroke of the gong and in central offices by a visual as well as an audible signal. If the protector board is equipped with a vibrating bell it will continue to ring until it is cut out by a switch supplied for that purpose. Upon going to the protector board of the plush protector type you will see at a glance the circuit that is out of order. First you should prop the finger up and see if it stays—if not you can go looking for trouble—a list of where to find them is given in another chapter of this article.

If you are to use your protector board to the fullest extent, it will be necessary for you to have the following charts on hand all the time for reference.

A chart of the total resistance of each circuit including the resistance of all apparatus in the office side.

A chart of the total length of all outside circuits including the gauge of the wire, the resistance per thousand foot, and all main line tapper resistance, etc.

A map of your complete wire circuits and the circuits should be scaled and drawn out just as they run, they should be marked off in five hundred foot lengths or less.

A chart of the office resistance on each side of the line, all main line relays, etc., but not any apparatus which has a local battery feeding it.

A chart of the battery voltage on each circuit.

In all calculations made for the protector board, it is necessary to figure correctly to get results, and the calculations should not be made in a haphazard manner if you are to locate the trouble.

The first thing to do when you have decided to use the board in the manner described, is to ascertain the type of a voltmeter you have, whether it is a counter poise or a straight reading meter, as explained before. The straight 150-volt meter has a resistance of 100-ohms to the volt, and the counter poise meter has a resistance of about 20,000 ohms. In some calculations we will have to have the resistance of the voltmeter so it will be necessary for you to have the proper value of the meter in order to use the foregoing method. As these calculations are standard I will list the different terms we will use here.

Total circuit current equals I
Total circuit resistance equals R
Battery voltage equals V
Test reading on positive side of line equals Vi
Test reading on negative side of line equals V2
Circuit resistance on positive side of the line equals Ri
Circuit resistance on negative side of line equals R2
Resistance of the ground equals Rg
Resistance of the voltmeter equals Rv
Sum of the two ground test readings equals Vs.

According to Ohms law we know that I equals Vr and that V equals IR, etc. The potential difference between any two points on a circuit is equal to the resistance included in this portion of the circuit, multiplied by the current flow through it. For instance we obtain a reading of .1 amps or 100 Milliamperes and we know we have 200 ohms resistance in this circuit. It is shown that it requires 20 volts to allow a reading of .1-ampere in this circuit.

Ground Resistance

If then there is a ground on the circuit, a reading will be obtained which will be somewhat less than the potential difference between the terminal of the battery and the point at which the line is grounded, since the resistance is included in the voltmeter circuit.

If the ground resistance is very low, of the order of one or two ohms, the voltmeter reading will be practically the potential difference between the two points. If the voltmeter is now connected to the other side of the battery, a reading will now be obtained which will be equal to the potential difference around the remainder of the circuit. If the ground resistance is very low, of the order of a few ohms, the sum of the two readings should be very nearly that of the voltage obtained directly across the battery. If the sum of the two readings are very much lower than the total battery voltage, then the ground resistance is very high and the more resistance we will have in our circuit.

The nearer these two readings come to the actual battery voltage the less the resistance of the ground and the more imperative it is that it should be removed at once.

If we desire to measure the resistance of the ground on any circuit on the board, we should go about it in the following way. Place the right hand switch handle on the ground test switch on the stud or terminal of the circuit we want to test and note the reading obtained. Have a note book or paper to tabulate the readings. Now test on the left or negative side, the same as for the right, and mark the reading down. Test the battery voltage on that circuit at the storage battery switchboard. Now it is necessary to find the resistance of the voltmeter. After we have these four readings we can form them into an equation and by looking at the list of the terms we will use you will find that, Rv equals resistance of the voltmeter, V equals battery voltage, and Vs equals sum of the two ground test readings. We then set it down as follows: $Rg = \frac{(V-Vs)}{Vs}$. The resistance of the ground equals, battery voltage minus the sum of the two ground test readings, divided by the sum of the two ground test readings. For example:

The ground test reading on the + side equals 8.5 volts.
The ground test reading on the negative side equals 10.5 volts.
The sum of two equals 19 volts.
Resistance of voltmeter equals 20,000 ohms.

To solve the problem, substitute the values stated in the formula given previously. The values will be

(*Continued on page* 831)

A Fire Well Handled by Volunteers

Small Department Uses Metropolitan Tactics in Checking Blaze in Bakery Store—Fire Promptly Handled—Ventilation Helpful

IN past articles in this series devoted to Administration at Fires, it has been the plan to print the story of the fire as the first installment and in the subsequent issue offer a suggested method of handling the fire.

In this installment the plan has been changed. Both the description of the fire as handled and the suggested method of handling it appear in the one article. This is made possible by the simplified operations employed in a department of such limited apparatus and at a fire of this size.

It is hoped that this article will be of real interest to the readers of FIRE ENGINEERING for it show what a small department can do under proper guidance.

The fire, as described by our correspondent is as follows:

We are a volunteer fire department of sixteen members, comprising one chemical and two hose companies.

The alarm for the fire described below came in at about five A. M. and upon our arrival we found the fire to be in the bakery. The front room of the bakery was also used as a confectionery store. The confectionery store, baking room and store room to the rear were all filled with smoke, as was the attic. There was no blaze visible and due to the density of the smoke we were unable to determine the location of the fire; smoke even came from between the cement blocks of which the sides of the building were constructed.

We entered the front door with a chemical line and one hose line, while a second line went to the rear, being in readiness to enter either the store room or go to the roof. There was a wooden partition between the bakery and barber shop which did not extend into the attic, that being all in one open space and there being no way to enter except through a small hole in the ceiling of the barber shop and through the cockloft of the bakery. At first we did not open this cockloft on account of the draft but after a few minutes of trying to locate the fire, finally decided to get rid of as much smoke as possible. (Two hose lines are now in readiness for use with enough hose to lay a line from hydrant No. 3.

When a little of the smoke had cleared away we found the oven to be down through the floor in the rear and at once began operations with the chemical line and hose stream from hydrant No. 1.

The fire was located in the attic over the oven upon which we began to work from the roof after cutting a small hole. The floor and walls of the barber shop were very hot and it seemed as though fire was between the studding but we could not locate it. After gaining control of the fires mentioned we were unable to locate any connecting link between the two fires. The rear wall was made of cement blocks and the ceiling was metal. The rafters and studding in the attic were burned very badly while the lath and studding in the partition which was between the bakery and the barber shop were not even charred. The electric light wires entered the building through the rear of the attic near where the fire was located but the lights were in service until we broke the wire.

Do you think it possible that the metal ceiling could become so hot from the floor fire that it would cause the woodwork above to become ignited? We were unable to find any trace of the fire being of incendiary origin and are at a loss to understand just how it reached the attic. The bakers had banked their fire and gone home at about eleven o'clock as near as we are able to learn.

Any pointers which you are able to give us relative to the manner in which we should have handled the above fire will be greatly appreciated.—R. G. Burns, Kans.

FOR VOLUNTEER FIREMEN

This article is of particular interest to members of volunteer departments. It shows how the modern small department can operate at fires with thoroughly modernized methods.

Readers are invited to send in descriptions of fires, which their departments have fought, for treatment in these columns.

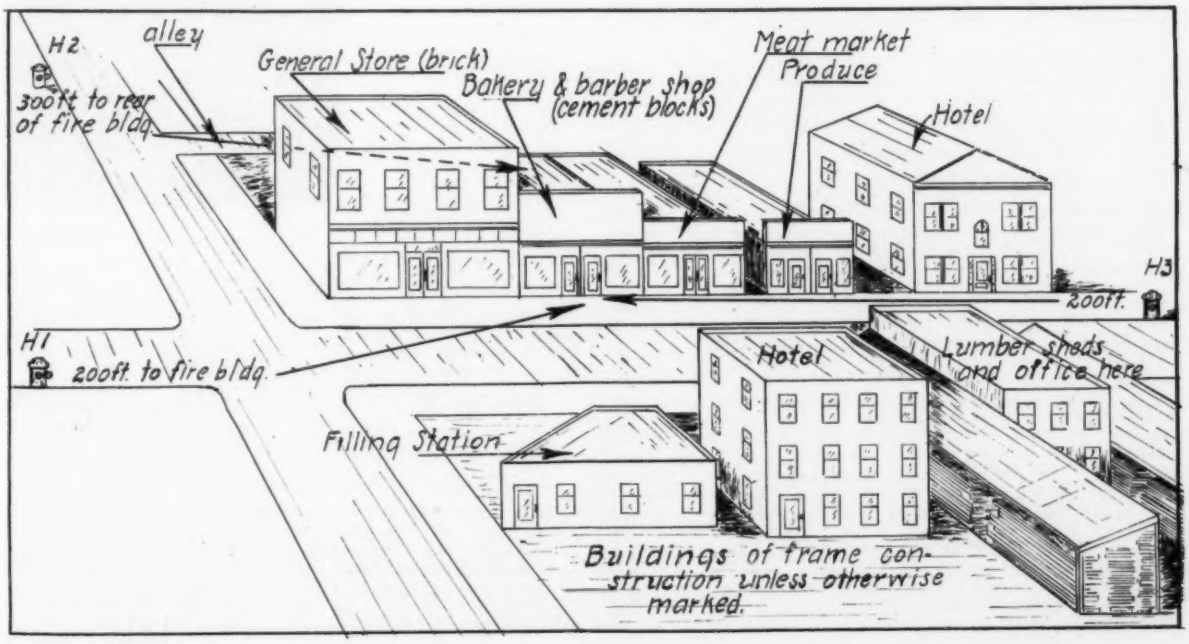
EDITOR.

Suggested Method of Handling the Fire

For a volunteer company this fire was very well handled.

There are one or two points on which, however, action was not quite as prompt as it might have been.

But let us analyze the problem.



The department upon rolling in was faced with a very smoky condition in the building which handicapped the men in their operations.

Then the very first thing to have done would have been to ventilate, which was not accomplished by the fire department until a little later.

Ventilation would draw smoke from te cockloft as well as from the store floor and make possible the operation of the men at close range.

The laying in of lines was satisfactory as carried out. It will be noted that both front and rear was covered, two lines going to the front and one to the rear.

A third water line might have been laid, had it been needed, by stretching hose on hand to one of the hydrants.

Note also that the volunteer department made sure that fire had not entered the cockloft above the barber shop, having made a thorough inspection of this from the roof above. Also observe that they were careful to make sure that fire had not entered between the studding and plastering of the partition between bakery shop and barber shop.

All these points show a mighty fine grasp of the essentials in operating at fires.

In other words the department covered exposures and made sure that fire was not extending. It ventilated, although a little tardily, and then proceeded to put the fire out.

Had the fire extended to greater proportions at the time the department arrived it is still likely that the Burns Volunteer Department would have been able to handle it.

As to the connection between the two fires, that burning around the oven and that burning up in the cockloft, little can be said.

If there were no vents through which the fire could pass, nor if there were no concealed spaces by which fire might rise, then the only assumption to make is that the heat of the fire in the oven caused the metal ceiling to be heated to such a point as to ignite the combustible materials above it.

This would seem the only solution, and the fact that the fire may have been burning for some time before discovery,—the bakers having left at eleven o'clock at night,—would make such solution seem feasible.

Reducing the Fire Losses

By N. LINCOLN GREENE
Vice-President and Gen. Manager, Clifton Mfg. Co.

Statistics showing the annual fire loss in the United States give figures so startling that one sometimes wonders why fire protection is not made a national issue to conserve the resources of the nation.

In time of war the cry is "Save-save-save" and every little hamlet, every village, town or city takes up the cry; every citizen bends his effort to saving as a patriotic duty. Why in times of peace is not equal attention paid to the conservation of property and to the effective means of saving, not only as a matter of thrift but of real patriotism? The wealth and resources of a nation are the total sums of the wealth and resources of its citizens.

The problem of reducing our fire losses to a minimum is not only the problem of the fire departments and protective departments but a vital problem to legislative bodies in every state, city and town. Private property and public property must be adequately protected by the best and most effective means. Public minded citizens are glad to give freely to prevent a waste that is as deplorable as it is futile.

Every fire chief strives constantly to keep his annual fire loss down to the lowest possible figure, not only as a matter of personal pride and to reflect credit on his department but as his contribution to the community he serves and the citizens who look to him for protection of their property.

Every manufacturer of fire fighting apparatus and salvage devices is striving to perfect his product not only for his commercial gain but as his contribution to eliminating as far as possible the havoc and economic waste caused by fire.

Figures tabulated from reliable sources show that of the annual fire losses only about twenty-five per cent is directly due to the flames and of the other seventy-five per cent, the greater part is really a "water loss." Here is where salvage work has its big opportunity. It is little consolidation to the property owner to find that his stock in trade has escaped the flames only to be "drowned" by the excessive water used to extinguish the fire. On the other hand, a merchant who finds when the fire is out that his merchandise is safely under cover, is high in his praise of the efficiency of the salvage crops and he becomes a booster for all civic improvement in economical salvage methods.

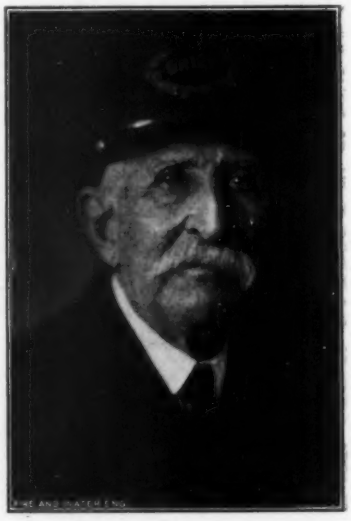
Experience has demonstrated beyond all question of a doubt that the spreading of salvage covers at fires is the most effective way of reducing loss and results in the greatest possible saving of property. Many times it is found that the value of property saved at a single large fire is far in excess of what it costs to pay all expenses of the entire salvage corps for the year. Some fire chiefs who once doubted the efficiency of salvage covers are now the most enthusiastic boosters for them. They have proven their merits and now no fire department can afford to be without them. In small municipalities where there is no regular organized salvage company every piece of fire apparatus should be equipped with from 3 to 5 protective covers. It is a small additional cost but insures tremendous savings in protection from smoke and water during the fire, and from inclement weather after the fire is extinguished.

When one considers the valuable merchandise stored in mercantile establishments, factories and warehouses, it is easily seen that a small expenditure for covers may possbly pay for itself after a single fire. The protective cover stands first in importance of all salvage apparatus. It is obvious then that it is of prime importance to secure the right kind of cover.

The National Board of Fire Underwriters has approved only rubber covers. These have been proven by test to be superior to oil covers. The Underwriters' specifications for these rubber covers are the result of years of practical experience and study and a cover guaranteed to come up to these specifications can be trusted to stand up under the severest conditions and to give the longest service. The covers are made of strong duck and a high grade of rubber compound impregnating every fibre of the duck and forms a strong thick armor of rubber so that they are absolutely waterproof and non-absorbative. The time and temperature of the cure in vulcanizing the rubber is such as to give the cover the longest possible life. The covers are made with turned edges and seams overlapped to insure the greatest strength.

Ex-Chief Myrick of Mobile, Dead

George W. Myrick, ex-chief of the fire department at Mobile, Ala., died at his home on Friday, August 13, while seated in a swing reading a newspaper.



The Late George W. Myrick.

He was best known to his men as "Captain George," and he commenced his long fire department career as a helper when the city had a volunteer department organization. Later he became keeper of one of the fire stations, and when the fire defenses of the city were placed on a paid basis, he was made captain. When Chief Charles S. McCosky resigned, Myrick was appointed chief of the department—while in this office, he acquired the nickname of the "grand old man." Although advanced in years, he was very active.

His life was devoted to the science of fighting fires, and when he was in a reminiscent mood, he could relate many interesting incidents. During the great hurricane of 1916 when he was first assistant chief, the ladder on which he was ascending broke, and he was thrown from a third-story window to the street pavement. He was in bed for several months—part of the ladder broke the severity of his fall, and thus saved his life.

During his regime, the fire department was motorized. When Chief Myrick retired as chief he accepted the less strenuous position of city fire marshal. He is survived by his widow, two sons, three daughters, and fourteen grand children.

Montana Firemen Propose State Prevention Campaign—A proposed legislative bill designed for a state wide fire prevention program, has been proposed at the convention of the Montana State Firemen's Association which was held at Big Timber. It was also proposed to take the two per cent fund derived from the insurance tax, and use it to educate the public in certain fire hazards, and the means for their correction.

WITH THE EDITOR

Recognized Appreciation

Just at this time when there seems to be such a general tendency to criticise fire departments in general, it is most refreshing to hear that Los Angeles, the leading city of the Pacific Coast, has recognized the efficiency of its fire department and indicated its appreciation of its Chief by tendering him a gift of ten thousand dollars. It goes to show that some cities do appreciate the work done by its servants. Needless to say it is recognition well deserved in the case of the Chief of this large western city.

An Unfair Request

Manufacturers of fire apparatus equipment have from time to time received appeals for funds for providing enterment at fire department conventions. Wherever such requests are made either the members of the committee are not aware of the expense to which the manufacturers are subjected in carrying out their part of the convention by providing exhibits, or else they are badly pushed for funds.

In either case the manufacturers should uphold as a unit any attempt to secure appropriations from them for providing entertainment, whether the appropriations are asked as gratuitous contributions or whether they are requested under the shadow of a general threat that their names will not be included in a list of "joint hosts" of the convention unless they contribute.

If the local committee is not posted on what the manufacturer must already pay in the way of expense in providing the exhibits and having proper representatives at the convention, they should be fully informed thereof.

On the other hand if they are pressed for funds for entertainment, and cannot secure the money from local sources, they should cut down on the entertainment.

The exhibit end of a convention is by far the most important, and the tests which manufacturers conduct of their apparatus and special devices form one of the chief attractions and benefits which are enjoyed by the delegates, many of whom are sent by municipalities to secure this valuable information.

To increase the burden to such a point as to discourage manufacturers to exhibit can lead to but one thing—suicide of an association.

From the standpoint of the manufacturers, should they go the limit in making donations for providing entertainment they would be working against themselves. The more entertainment that is provided and the more the delegates to a convention are kept away from the business of the association, the less time they will have for examining the exhibits and attending tests of apparatus. Thus the manufacturers, by providing for the wildest wishes of entertainment committees for conventions, cut down the time available for examination of their displays.

The majority of fire chiefs well appreciate what the manufacturers are already up against in the way of expense, and if the matter were put to a vote there is no doubt whatever but that the various associations would free the manufacturers from any assessments for providing entertainment for the membership.

There is but one thing for manufacturers to do, namely, refuse to make contributions for such purposes. They are already doing more than their share, and to permit an imposition of this sort would not only be disagreeable but extremely harmful to an association.

Two Interpretations

The town of Nantucket, Massachusetts, has a fire ordinance which reads as follows: "Every building hereafter erected within the fire district shall have a non-combustable roof covering and no roof shall hereafter be recovered for more than 25% of its surface with other than non-combustable roof covering."

Recently a case came before the attention of authorities in that town where a newly built el of a building was roofed with wood shingles. The fire department contended that the el was new construction and upon such grounds insisted that the builder had violated the law.

The builder, on the other hand, contended that the el was a part of the building erected and that has the total area of the roof of the el was but 21% of the area of the entire building, hence he did not roof it with fireproof shingles but used wood shingles instead, such being the roofing already in position on the building.

To make matters more interesting the lower court held the builder had violated the law. The Supreme Court, reversed the decision and contended that the builder was within the law in using wood shingles.

In cases of this sort a difference should be made between the letter of the law and the intent of the law. There is little doubt but what the fire chief is often in the right in so far as his contentions go. On the other hand capable lawyers have been able to convince the Supreme Court Judge that in this case the letter of the law is the intent of the law.

When citizens of the town are willing to go the limit to accomplish their selfish designs, never giving a thought to the safety of their neighbors property, laws enacted should be enacted with this condition in mind so that they will be easier to enforce and more effective in administering.

"Stover Special" to Convention

Frank F. Stover of the Gamewell Company has arranged a special train to take those who plan to go to the I. A. F. E. convention at New Orleans, and who plan to embark from Chicago or points nearby.

Frank F. Stover.

For the accommodation of members and their families who will attend the Convention of the International Association Fire Engineers, to be held in New Orleans, La., arrangements have been made with the Illinois Central System for a special train, consisting of high grade steel constructed, electric lighted sleeping cars, observation sun parlor lounging car and dining car. This train which will be known as the "Stover Special" will leave Chicago (Central Station, Michigan Boulevard and Roosevelt Road) at 6:15 p. m. Sunday, October 17th, stopping at 53rd and 63rd Streets, Chicago, Kankakee, Ill., Champaign, Ill., Mattoon, Ill., Effingham, Ill., Centralia, Ill., Carbondale, Ill., Cairo Junction, Ill., Fulton, Ky. and Memphis, Tenn., arriving New Orleans 8:15 p. m., Monday October 18th. All those attending this convention are cordially invited to join this special train at Chicago or en route. This is an ideal way in which to make the trip, as it will give one an opportunity to renew old acquaintanceships and discuss matters of mutual interest to be taken up at the convention. Pullman fares, lower berth, $10.13; upper berth $8.10. Drawing Room, $36; Compartment, $28.50.

All those who plan to join the "Stover Special" should mail a check for the Pullman fare to Frank F. Stover, The Gamewell Company, 417 S. Dearborn St., Chicago, Ill. When purchasing railroad tickets, do not forget to ask the ticket agent for a certificate which will be validated at the convention. This will enable one to return on the same railroad at one-half of the usual railroad rate.

Massachusetts Chiefs to Have Special Train

A special train is being arranged to transport the members of the Fire Chiefs Club of Massachusetts to the convention of the International Association of Fire Engineers at New Orleans, by George F. Cobb, traffic manager of the club.

The train will consist of four sleepers, dining car, and club car, and it will leave the North Station in Boston on Saturday, October 16 at 2 p. m., standard time. The schedule of the time of departure of the special from other stations is as follows:

Leave Fitchburg 3.13 P. M., Standard Time.
Leave Gardner 3.44 P. M., Standard Time.
Leave Greenfield 4.44 P. M., Standard Time.
Leave North Adams 5.46 P. M., Standard Time.
Leave Troy, N. Y. 6.55 P. M., Standard Time.
Leave Albany, N. Y. 7.52 P. M., Standard Time.
Arriving at New Orleans, Monday, October 18, at 10 A. M. Transfer to Roosevelt Hotel.

The expenses of the trip outside of the amount spent while at New Orleans may be divided as follows—fare from Boston, round trip, $83.21; Pullman, meals and tips, round trip, $55; hotel room, $4.00 and $4.50 a day.

The Chamber of Commerce of Baton Rouge, La., has extended an invitation to the club members to stop off there when on the return trip. No decision has been made and full details will be announced aboard the train.

Attention of the members of the International Association of Fire Engineers is called to the fact that railroad fares to the convention at New Orleans will this year be arranged on what is known as the round trip identification plan basis fare and one-half for the round trip which will be paid at the time ticket is purchased, instead of buying a ticket one way and then buying a return ticket at the convention city at half rate as has been done in previous years.

A certificate will be mailed to each member by the secretary and this certificate must be presented to the ticket agent where ticket is purchased and signed by the person presenting the certificate in pen and ink in the space provided for that purpose. One certificate will cover a member and his family. If any more certificates are required or anyone going to the convention does not receive a certificate from the secretary, they may be obtained by writing to George F. Cobb, traffic manager, 774 Albany Street, Boston.

Fire Destroys Berkely, Mich., Department

Fire of mysterious origin destroyed the fire department and fire alarm equipment of Berkely, Mich., as well as two motor cycles belonging to the police department. It also wrecked a new pumping engine.

The Royal Oak department which fought the flames, as a result of this incident, have insured their fire alarm equipment. A member of the state fire commission who investigated the fire said that the circumstances were very suspicious.

Chief Elmer Flechsig left the town hall and talked with the chief of the police at the curb. A moment later some one saw smoke and called their attention to it. Before they could investigate, an explosion tore the heavy iron doors from the building and the flames ignited several oil containers in the building; the blaze spread to the village hall occupied by the police department.

The Royal Oak fire department was called but before it could arrive, the building was completely destroyed. One of the oil containers was found in a new location, and the chief is inclined to regard this as a valuable piece of evidence that points towards an investigation of the fire.

Ex-Chief Murphy of Buffalo, Dead

Edward P. Murphy, formerly chief of the fire department at Buffalo, N. Y., died at his home in Buffalo on July 28 from heart trouble with which he was afflicted for the past ten years. It was not until a year ago that the disease became serious, and he was confined to his bed for three days prior to his death.

He was born in the old first ward of the city on February 2, 1857; he received his education at St. Brigid's school and at St. Joseph's College.

Chief Murphy's first job was an apprentice to a blacksmith. Fire-fighting appealed to him and he joined the George Chambers Engine Company as a pipeman.

The Late Edward P. Murphy.

About a year later, he was made tillerman in truck company No. 2 and shortly afterwards he was promoted to captain. On May 1, 1883, Murphy was made chief of the first battalion and in 1890 his rank was advanced to assistant chief. In October 1918, when Chief McConnell retired, Chief Murphy was advanced to the head of the department. He held this rank until April 1, 1924, when he was succeeded by Chief Hedden.

The passing of Chief Murphy recalls many instances of his daring bravery. He first attracted attention when he rescued four children single handed from the burning Revere Block, at the Canal and Erie Street in 1878. At the burning of The Richmond Hotel, when almost a score of guests lost their lives, Chief Murphy succeeded in saving the lives of six women. One of the women jumped, and was caught by Murphy at the top of the ladder.

In the same year, during a fire at the Phoenix brewery, Murphy was at the top of a ladder directing the lines when the ladder fell from beneath him. He grasped protruding eaves and managed to hang on until an extension ladder was raised.

Sedalia, Mo., to Standardize Threads—The threads on the hydrants and hose in Sedalia, Mo., will be rechased to conform with that of the National standard. The work is being done under the direction of the Missouri Inspection Bureau. The city now has six threads per inch on all their hydrants.

QUESTIONS AND ANSWERS

Conducted by FRED SHEPPERD, B. Sc., M. E.

"He that questioneth much shall learn much"—BACON

NOTE—Readers of FIRE ENGINEERING are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Finding Capacity of Rotary Pump

To the Editor:

I have at hand several of your books on fire fighting and hydraulics, and so far I have been unable to find a formula for finding the capacity of American-La France pumpers, or others with rotary gears. I have full details for gasoline driven piston pumps and would like to know the difference in rotary and piston driven pumps, if any.

I would appreciate your working out an example, using the rotary pump, if such is possible.

Respectfully yours,
W. F. C., May 20, 1926.
Norfolk, Va.

Answer: As to finding the discharge from an American-La France pumper by formula you must know the displacement per revolution. In other words you must know how much water the pump discharges each time the rotors revolve once. This is usually given in trade literature. If such a problem were given you on examination it would state in the problem the displacement per revolution. If it did not state this there would be no way of your finding out the discharge.

The discharge of any rotary pump is equal to the displacement per revolution times the number of revolutions per minute. In other words, it merely means the quantity of water discharged each time the pump revolves multiplied by the number of revolutions of the pump per minute. This would give you the discharge in gallons per minute if the displacement were given in gallons.

Newark Captain Examination Questions

To the Editor:

Enclosed are questions asked at a recent examination for Captain in this department. Kindly answer same through your columns at an early date.

S. E., Newark, N. J.

Question 1. Assume a brick building one story and basement fronting on east in the middle of the block. To the west in the rear across a 16 foot alley are a number of three-story dwellings set back approximately 5 feet from the property line. To the north is a four-story department store and to the south the blank wall of a fireproof theatre. The first floor is divided into 5 stores occupied as follows:

491 — A battery service station—repairing and charging storage batteries.
493 — Automobile tire sales — repair and vulcanizing shop.
495 — A sign paint shop.
497 — A cleaning and pressing establishment.
499 — A paint store.

The basement is occupied jointly.

As captain of an engine company you are first to arrive in response to an alarm of fire in the above building at 10 a. m.

Upon your arrival you find that the fire has gained considerable headway, having enveloped the entire sign paint shop which is in flames and is beginning to communicate to the cleaning and pressing establishment.

A. State all the fire hazards which exists under the above conditions.

B. If you were in command at this fire for ten minutes state fully just what you would do and the order in which action should be taken, giving reasons for your procedure.

Question 2. (A) Define "Overhauling" and state the purpose and value of same.

(B) A fire occurs in a three-story building with a grocery store on the first floor and apartments above. After the fire has been put out, you as captain are directed to take charge of the overhauling in the building.

Explain briefly but quite completely what you would do.

Question 3. (A) State the chief objects of ventilating a building on fire.

(B) Describe in detail how a ten-story building should be ventilated when the fire is on the third floor.

What precautions should be taken?

Question 4. Name the two types of sprinklers for use in stores, factories, etc., and explain clearly the operations of one in case of fire.

Answer 1. Due to the fact that this fire occurs at 10 a. m., there is little if any life hazard to be feared in connection with the theatre, the unpierced wall of this building affording ample protection for the persons who may be about the premises, allowing them to vacate the building if necessary. Patrons and employees of the four-story store to the north will, however, be thrown into great confusion if not panic unless the building is protected by a blind wall which would conceal the progress of the fire and in the meantime allow all persons therein to get to points of safety outside of the building.

The type of construction represented by these five stores is such as to lead to rapid burning. The large open basement with the usual fast burning materials in the cellar will develop into a hot fire in very quick time. The fire may travel vertically by passing up through the stairway leading from the cellar on the inside of each store or it may pass up in the wall on either side of the row of stores. It will not, however, pass up through partitions as the partitions do not pass through the floor, but are built from the floor on up.

The battery service station is dangerous chiefly from the weight of materials found in it, as well as the possibility of sulphuric acid fumes being generated and the effects of these upon the men operating at the fire.

The occupancy of the auto tire and repair shop and the cleaning and pressing shop may be considered troublesome from a fire standpoint, as each will tend to burn rapidly and the materials usually found therein add to the intensity of a fire.

The sign paint shop and the paint store represent serious hazards due to the highly inflammable nature of paints, paint thinners, etc., and will in all probability prove troublesome due to dense smoke and fumes encountered at fires in paint establishments.

If fire passes up through any of the vertical passageways to the cockloft which extends over this type of structure from end to end, and unobstructed, the fire will quickly involve the entire roof unless ventilation is provided and lines gotten into play at once.

The chief exposure is at the rear of the row of buildings across the 16-foot alley. Fire rising out of any of the buildings may readily involve the dwelling to the rear.

The exposure at the south is not serious from a fire standpoint, as there is an unpierced wall on this side. Details on the northern exposure are lacking, that is, whether a blind wall or a wall with windows is on this side of the store building. If the latter is the case a serious hazard exists because if fire passes through any of these windows it will likely make rapid headway over the large open areas stocked with highly combustible materials.

Possibilities include the rapid spread of fire through the entire basement, the rising of the fire to the cockloft and spreading through the cockloft, involving the various stores by the fire burning through the floors or else up through stairways which lead to the basement; the possibility of fire spreading to dwellings in the rear, as well as to the four-story store unless an unpierced wall affords the necessary protection.

In fighting this fire, if fire has involved the entire basement and if the contents thereof are of a highly inflammable nature, call additional help at once.

Locate fire. Open street entrances to building and get lines in operation on seat of fire.

Open up rear windows to provide ventilation and if necessary put lines to work.

If fire has covered the basement, then attention must be directed to covering exposures (vertical) and prevent fire from getting into cockloft.

Assign truckmen to patrol stores to make sure that fire is not rising therein, and if necessary assign lines to stairways leading to basement to prevent fire from rising.

If smoke is too intense to operate from street entrances to building cut holes in floors and put cellar pipes to work over

fire. If fire is confined to cellar, distributors will best bring the fire under control.

If stores are charged with smoke, ventilate by opening doors at front and windows at rear and, if necessary, the skylights over the stores.

Make sure that employees and patrons of store are not endangered by spreading fire. Have building cleared out if necessary.

Answer 2. Overhauling might be classed as cleaning up after fires. The object of this work is to reduce property damage to a minimum and check damage to goods through water passing from upper to lower floors of a building.

Overhauling also serves the purpose of making sure that all fire has been extinguished, for on opening up woodwork, plaster walls, ceilings, and even floors, concealed fire is located and extinguished. The efficiency of a fire department is frequently determined by its thoroughness in overhauling after a fire.

The question does not state in what part of the building the fire started or what parts were damaged by the fire and subsequently through water during the extinguishing operations. It will therefore be assumed that the fire started on the second floor and spread upward, thereby making overhauling necessary on all three floors.

The first step to be taken in overhauling any building is to provide proper drainage so that water will flow off and without doing unnecessary damage to materials on floors below. If extent of fire has been large it will be necessary to systematically go through damaged materials and household effects. Clear a space and work thoroughly through debris by shifting it to the cleared space, always working on a cleared floor. Use no water from hose line in wetting down unless size of fire remaining requires it. Instead, fill buckets or similar objects with water and dip the burning materials in the water wherever possible.

To insure safety to the men assigned to this work a thorough examination of the floor beams should be made before starting operations. The store will most likely be heavily stocked with canned goods and if any portion of the floor has been weakened the remaining stock should be shifted to other points. As the two upper floors are occupied as apartments these floors will not be heavily loaded and should not prove hazardous unless floor beams have been severely weakened by fire.

All light, and air shafts, pipe and wire recesses, chutes and floor openings should be examined to make sure that fire has not extended elsewhere. Also examine partitions, walls and frames about doors to see that fire is not concealed therein.

Answer 3. (a) The chief objects of ventilation are: First, to draw the fire up through a confined channel through the building and exhausting the heat and smoke directly to the atmosphere above the building instead of permitting the heat and smoke to accumulate on the top floors and mushroom over the entire floor area. Second, to relieve the building of gases and smoke and thereby make it possible for the members of the department to operate up close to where the fire is burning, checking the spread of the fire.

3. (b) If fire has partial possession of the third floor it is likely that this floor will be heavily charged with smoke.

Before men can enter this floor the condition will have to be relieved. This is best done by opening roof of building over stairs and elevator shafts and opening such windows on fire floor as are necessary.

Before opening up, lines must be in readiness. The procedure at this fire would be as follows: Stretch lines from second floor and third floor standpipe connections and be ready for operation at the third floor stairwell entrance of building (assuming stairway not involved). Send man to roof by way of stairway to open up over elevator shaft, and stairwell also, the lines in position holding the fire back. Windows on third floor at front of building can be opened from ladder and as soon as they have been opened lines can be put in operation at these points to work on fire. Windows on third floor front as well as rear may be opened by any one of a number of different methods, even breaking the windows if they cannot be opened otherwise. While fire may travel up elevator shaft, the holding of the stairway will make possible the rapid use of lines on upper floors to prevent fire from working in on any other floors above. In opening up the roof it is a good precaution to make sure that no building will be exposed by the heat arising from the shafts; if such an exposure exists a line should be brought into play to cover it.

Answer 4. Two types of sprinklers used in stores, factories, etc., are the dry pipe system and the wet pipe system.

The latter system will be briefly described here: This type of system is one which is at all times filled with water, and the opening of a sprinkler head opens a valve which lets the water directly out.

When a fire occurs in a building which is sprinklered by this type of system the heat of the fire melts a little connecting link on what is termed a sprinkler head. The connecting link upon melting permits the sprinkler head to open up and water supplied by the wet pipe system is discharged on the fire. The water for such a system may be supplied directly from a tank on the roof of the building, by a pressure tank, or by fire department connection.

Hose Factors and Nozzle Velocity

To the Editor:

Kindly inform me as to the simpliest formula to obtain the "constants" used for reducing 3-inch and 3½-inch lines, also these lines siamesed, and two or more 2½-inch lines siamesed into one 2½-inch line having the same friction loss.

If possible inform me how to calculate the velocity per minute at the nozzle when the flow of gallons is given.

Hoping you will favor me with this valuable information, which I assure you will be appreciated as have your past favors.

Yours truly,

B. H. W.

Buffalo, N. Y., April 17, 1926.

Answer: The various constants used for reducing different sizes of hose to single lines of 2½-inch hose are secured by comparing the friction losses in various sizes of hose for various flows. The constants merely indicate the length of the hose being considered with the length of 2½-inch hose which would have the same friction loss.

In other words, comparing 3-inch to 2½-inch hose the factor for reducing 3-inch to 2½-inch is 2.6. This is another way of saying that we can have 2.6 times the length of 3-inch hose for the same friction loss that you would have with a given length of 2½-inch hose having the same flow. Thus for a constant flow we could use 260 feet of 3-inch hose to get the same drop in friction that would be found in 100 feet of 2½-inch hose.

There is no simple rule for determining various constants.

Below are given the constants used for reducing various sizes of hose to 2½ inch.

In the event that you have two parallel lines of equal length of a size larger than 2½ inch, these individual lines can be reduced first to 2½-inch and then combined by using the factor 3.6 to give the equivalent length of a single line of 2½-inch hose.

Factors—Single Lines

Diameter.	Factor.
¾ inch chemical hose	0.0029
1 " " "	0.011
1½ " rubber lined hose	0.074
1¾ " linen hose	0.0157
1½ " " "	0.039
2 " " "	0.16
2½ " " "	0.47
2¾ " rubber lined hose	1.66
3 " " " "	2.6
3½ " " " "	5.8
4 " " " "	11.0
4½ " " " "	19.5
5 " " " "	32.0

Siamesed Lines of Equal Length

2—2½ inch	3.6
3—2½ inch	7.75
2—3 inch	9.35
3—3 inch	20.4
1—3 and 1—2½ inch	6.1
4—2½ inch	12.4
6—2½ inch	27.0
4—3 inch	32.0
2—2½ and 1—3 inch	11.5
2—3 and 1—2½ inch	15.0

Standpipes

4—inch	7.5
5—inch	22.0
6—inch	52.0

To calculate the velocity of water from a nozzle when the discharge is given in gallons per minute, the procedure would be as follows: Change the gallons flow (per minute) into cubic inches by multiplying by 231.

Determine the area of the nozzle in square inches. Divide the discharge in cubic inches by the area of the nozzle in square inches and you will get the velocity in inches per minute. Divide by 12 and you get feet per minute. Divide feet per minute by 60 and you will get feet per second.

As an example, assume that a one inch nozzle is discharging 100 gallons per minute. We are requested to find the velocity in feet per second from the nozzle.

If the diameter is one inch, the area will solve out to be .7854 square inches.

The discharge in cubic inches per minute will be 100 x 231 or 23,100 cubic inches. Divide this discharge by the area of

the nozzle, .7854, and we get a velocity of 29,412 inches per minute. To change this to feet per minute we divide by 12 getting 2,451 feet per minute.

To find velocity in feet per second we divide by 60 (number of seconds in a minute) and get 40.85 feet per second.

New Alarm System at Plaquemine, La.

A new Gamewell fire alarm system has recently been installed at Plaquemine, Louisiana. The new system is unique in that it consists of an eight inch chime whistle which is operated by compressed air in place of steam. The installation was made at the local electric light plant where a supply of compressed air is always available. This necessitated the installation of only one air reservoir.

A list of the apparatus includes the following: 1 1-ckt. 2-loop Storage Board; 1 60" 3-shelf Battery Rack; 1 Cole

Left—View of 1-Circuit, 2-Loop Board, Battery Rack and Battery; Right—View of the Compressed Air Tank and Chime Whistle Installed at Plaquemine, La.

Transmitter (closed circuit); 1 10" Turtle Gong; 3 Ideal Registers; 3 ½" Peerless Take-up Reels; 1 8" Chime Whistle; 1 Uniform Time Relay; 4 6" Turtle Gongs; 64 Cells F. I. P. Battery; 1 Motor Generator Set.

Modern Fire Alarm Signaling

(*Continued from page* 824)

then, Rg equals Rv $\frac{(V-Vs)}{Vs}$ equals 20,000 $\frac{(20-19)}{19}$ equals 20,000 $\frac{(1)}{19}$ equals 1054 ohms resistance.

It is also possible to calculate the exact distance from the office to the grounded point by these equations. The old way to find a ground was to go out and hunt for it which was a difficult task in bad weather and dark nights. It is possible by these tables to locate a ground within a very few feet providing you know a few of the figures that are necessary and have your circuits properly scaled out on your circuit map.

The proper way to find the distance from the office to the grounded point will now be taken up. The method will show the way to find the distance on either side of the line.

To find the distance on the positive or right side of the line we will use the following table: $Ri=Vi\left(\frac{Ri+R2}{Vi+V2}\right)$ By referring to the able of terms we will see what these different terms represent. A typical example will be workd out and will perhaps show better than an explanation.

Let the office resistance on that side of the circuit equal 90 ohms and one the left side 72 ohms and the outside line equal 50 ohms. Then Ri + R2 equals 212 ohms. Vi equals 8.5 volts and Vs equals 19 volts then our equation will be $8.5\ \frac{(212)}{19}$ equals 95 ohms. As said before the office resistance on this side of the line was 72 ohms we now subtract 72 from 95 and we have 23 ohms for an answer. The resistance of No. 10 copper wire is about 1.04 ohms per thousand feet then our answer will be as follows: $\frac{23}{1.04}$ times 1,000 ft. equals 22,100 ft. This is the distance from the office to the grounded point if our figures were correct.

The distance from the office to the grounded point on the left or negative side will be R2 equals $V2\left(\frac{Ri+R2}{Vi+V2}\right)$ or $10.5\left(\frac{212}{19}\right)$ This equals 117 ohms. The office resistance on this side of the office is 90 ohms; 90 from 117 leaves 27 ohms. The answer will be $\frac{27 \text{ times } 1{,}000}{1.04}$ equals 25,900 feet.

The distance on the right side when added to the distance on the left side should be the total length of wire in the circuit if computed correctly.

The resistance of the positive and negative side of the line when added together should equal the total line resistance and you can check yourself by these figures.

It at any time the circuit should open and it is not possible to correct the fault at once, send a man out to the last box on the line and have him ground one side of it at this point. He should then call the office and the operator can ground one side of the line in the office—if this should not close the line the operator should plug in the other side of the line. If this will not close the line, the operator should instruct the man at the box to ground the other leg of the line, should only one side of the line be open, it will close, but if two sides should be open, it is not possible to close it by grounding the line.

When a line opens as is indicated by the tapper or other means, the first thing that should be done is to throw the battery that is idle over on the working line. If a battery fuse in blown when the batteries are shifted the line will close. If this will not close the line, put several steps of resistance in the circuit at the storage battery board and go to the protector board to plug out the outside line as shown in the sketch of the pin switch. If the break is outside the line should close, and if it should not, the line is opened in the office or on the board.

Troubles and Remedies

Trouble—Line open. Cause and remedy.
- Blown line fuse. Replace fuse.
- Protector tripped. Restore to position.
- Blown battery fuse. Replace fuse.
- Line down outside. Test and send out repairmen.
- Resistance burned out on 7-step rheostat.
- Battery jar broken. Replace battery.
- Box burned out by high tension, lightning, or any abnormal cause. Replace box.
- Swinging open line. Find and correct.
- Box stuck on open position. Find and repair.
- Several unknown causes which you may find, will open the line, can be found under the trouble list for storage battery switchboards.

Trouble—Fuses keep blowing. Cause and remedy.
- High tension on line. Locate and clear line.
- Lightning. No remedy.
- Swinging open line. Locate and replace section.

Trouble—Line current falls Rapidly. Cause and remedy.
- Weak battery. Test and replace.
- Heavy ground. Test out and correct.
- Several box doors open. Locate and close.
- Not enough battery. Add battery.

Several troubles that will come up can not be described and are best found by actual tracing, and will serve to give one good experience. A continuity test should be made twice a day in a large office, if the board is provided for such and it should be kept on record.

Protector boards are the center of operations in a large office and they should be handled by a competent man. For best results a man on each shift should be assigned to make all tests and replacements and in that way it is possible to hold a man responsible for failure of operation.

No props of any nature should ever be placed under the plush protectors and special care should be taken of the argus coils as there is an adjustment of 18 thousandths of an inch between the coil and the plate and it can be easily thrown out. No fuses except the proper rating should be used and a plentiful supply should be kept on hand so as to be available at all times.

The boards should be cleaned every day with a clean cloth and nothing should be applied to it. Each shift when relieving should make a test for grounds etc. If any grounds are on the system it should be in the record book including the time of discovery and the time of the line being cleared.

The next article will take up relay boards and will touch on its description, installation, wiring use and repair.

COURSE OF INSTRUCTION IN FIRE PROTECTION

AS GIVEN AT THE UNIVERSITY OF ILLINOIS

HAZARDS AND EXPOSURES

By BENJAMIN RICHARDS
Manager Underwriters' Service Association, Chicago

THIS seventeenth installment of the University of Illinois Course in Fire Protection continues the consideration of general hazards and exposure. In treating of this subject, the author speaks from expert knowledge, and his ideas will be found of great value.

Some Items in Control of Exposure Fires

Assuming one cannot control neighboring property by the building code but has bad conditions to meet, there are a few items which can be considered, as follows:

I suppose the best protection against exposure is private fire fighting means, such as hose, hydrants and pumps, because you can go out a few hundred feet and tackle the fire before it gets into your windows and can have the hose laid out ready for the fire department when they get there.

Paterson, N. J., experienced a severe fire once. There was a line of silk mills in the path of the fire and having hose they got out and stopped the fire in a perfectly straight line. If they had waited until the fire got to the windows of the mills and for the sprinklers to work, the mills would have been lost.

The next best thing to stop exposure fires, probably, is the blank brick wall, made of good old fashioned bricks. Then assuming there must be windows, as I said, we rely on wire glass, shutters and open sprinklers. Shutters, of course, will save more loss than the other methods because the fire chief can attack the fire freely, if the shutters are shut on the adjoining buildings, and he will not have to wet down that building, as the shutters can effectively keep out the hose streams used on the adjoining fire.

Some of the large congested shoe shops in the east are fixed up in that way. In Massachusetts many of the shoe factories are five or six stories high and the windows, being shuttered, the fire department can operate on a fire to their hearts' content without wetting down the shuttered building. Wire glass in a wooden frame or in an unapproved steel frame is not much use. I had a fire in Detroit where wire glass panels were pushed out on the sidewalk. The unapproved steel frame expanded from the heat and forced the glass out of it, although the glass remained intact until it struck the sidewalk.

Open Sprinklers on Wooden Walls

When we come to wooden walls of course we are pretty well up against it to fight exposures. We put open sprinklers on these exposed wooden walls. I remember where there burned a seven story wooden sheep skin tannery near a storehouse containing about a million dollars worth of finished calf skins. There was a wooden wall with three rows of outside open sprinklers and by keeping the fire pump running continuously to supply the sprinklers we saved the warehouse. That fire was in a wooden plant, six stories high and only 40 feet away, so it was an unusually favorable result from the use of open sprinklers.

Open sprinklers are usually connected to the city water and as the water is under the control of the fire chief at the time of fire, it is not likely to be used for private open sprinklers very much.

The only other protection against exposure is good plaster on metal lath or sometimes metal cladding, which, however, will get hot and ignite woodwork beneath it.

Oil Tanks Present Different Problem

When we come to certain classes of exposures, such as oil tanks, we are up against an entirely different problem. The problem of oil tanks has been before us a couple of years with all sorts of opinions expressed, but the main point is to keep them away as much as you can. If you cannot do that build some dikes or ditches or walls so if the oil gets loose it will not drain to your property and destroy your building. Good old cold water is good protection against oil fires if you can get enough of it.

You have read how the burning oil in the harbor of New York was kept away by the streams of fire-boats by sweeping the surface of the water with the streams and keeping the fire away from the wharves. That can be done on the ground as well.

Exposures in Relation to Conflagrations

When we come to conflagrations, when a city is on fire, of course there is not much we can do with private protection of any kind. Superior construction will help some. In the Salem, Mass., fire, although the cotton mill was all destroyed, there was one building, a three or four story, small reinforced concrete warehouse, with wire glass windows and shutters on the windows (inside shutters and wire glass outside), and although the building was full of smoke and we paid some loss, it was the only building standing in many acres of ruins. So this shows that good construction is some good even in the case of conflagration exposures.

In that same fire there was a four story shoe counter factory and the building was sprinklered. Of course the demands for water in that fire were very heavy. The other towns turned in the water from the so-called Metropolitan water system and there was not really a shortage of water, but the pressure fell so the sprinklers in the top story of the factory did not get water. The top story was therefore burned off, but the other floors, where the sprinklers did get water, held and the factory was operating again in a few weeks. So automatic sprinklers can do good if they have water, even under very trying conditions.

In the Toronto conflagration, the sprinklered Kilgore factory stopped the fire in that direction. The factory was badly damaged, but the sprinklers helped stop the fire and saved much of the factory.

Inflammable Roof Coverings

Roofs, of course, become very important when studying conflagrations and all fire chiefs know the troubles we have had with wooden shingles for the last eighteen or twenty years.

A conflagration fire does not go from block to block. We were comfortably walking along the streets in the Chelsea, Mass., conflagration, but over our heads burning pieces of roofs were sailing along and they would drop down a half a mile or so in front of us and set the buildings afire. So hundreds of fires were started all at once. That's where the shingle roof proves a bad feature. A fire chief said that he liked to see the fire running out through the roof so he could locate it, but with ten acres of shingle roofs around him he doubtless would divide his department to fight the many fires which would start from sparks and flying brands. On the other hand if there were slate or tile roofs I am sure he would concentrate his efforts on the one fire and not worry much.

Some cities prohibit inflammable roof gatherings and require slate. Of course the prepared roofings are good, especially those that have been tested and approved. I saw a little dwelling house fire where some shutters or blinds which were burning fell on a lower roof. The roof was covered with some unapproved roofing paper. It was not entirely new, but those blinds burned up on that roof without setting it on fire, showing that roofing if properly selected is a great help.

(*To be continued*)

Kansas City, Kans., Stops Large Oil Fire

Fire which started in the oil and grease plant of the Standard Oil Company at Kansas City, Kans., and which developed into a second alarm fire was effectively extinguished before much damage was done. The fire was burning for some time before it was discovered by the night watchman—the two alarms brought three pumpers, one chemical combination hose car and one truck company—the thirty men laid about 3,500 feet of hose.

The structure involved is about fifty by two hundred feet with no partition walls; the stock was piled up to the ceiling. The building and contents were valued at $225,000 but the damage from the fire was only estimated at $5,000. In the opinion of the manager of the company, this is the first time in the history of the company that a fire with such a large start was extinguished with so small a loss. The Standard Oil Company donated $100 to the department's relief fund.

DEPARTMENT STORE AND MASONIC TEMPLE DESTROYED IN LOWELL

General Alarm Sounded to Call Men on Off-Shift—Assistance Rushed from Nearby Towns—Business District in Danger

A BLAZE that was discovered on a Saturday afternoon in the Pollard Department Store in Lowell, Mass., developed into a fire that destroyed the department store buildings and the Masonic Temple with an estimated loss of $1,500,000. The store had closed at noon, and only the janitors were in the building.

The fire started in the basement and had gained considerable headway before it was discovered by the foreman of a gang

Lowell and Neighboring Fire Departments Attacking Blaze in Department Store and Masonic Temple.

of street workmen who saw smoke issuing from the rear windows of the basement and ran to the Central Station nearby to report the fire. About the same time, Chief Saunders, who was on the street near the firehouse saw smoke and turned in an alarm from a nearby box.

There was the crash of glass from the window of an upper story and the head of one of the janitors appeared in the aperture. He shouted "The whole building is on fire!" and rushed down on outside fire escape.

Chief Saunders, realizing the seriousness of the situation, ordered all the apparatus in the city to the scene at once, by telephone. Half an hour later the general alarm signal was sounded on the bells and whistles to summon the men of the off platoon. Meanwhile the apparatus had arrived and had been placed in service unhampered by the automobiles and crowds which would otherwise have quickly gathered.

The flames spread through the upper floors and fire was showing at the upper windows by the time the department got into action. Dense clouds of smoke hampered the firemen and within fifteen minutes the flames were issuing from every window on the Merrimack Street front of the main store. The department store occupied four brick buildings which were joined together. Two of these buildings fronted on Merrimack Street and two on Middle Street with one of the latter also fronting on Palmer Street. Between the buildings were narrow alleys bridged by two story corridors and with tunnels connecting the basements. The two front buildings and the two rear ones were separated by fire walls, but doors had been cut through to permit of easy access and several of the existing fire doors were found to have been left open. There were no automatic sprinklers or thermostatic alarms. All four buildings of the Pollard store and the Masonic Temple adjoining were completely destroyed and for a time the entire business section of the city was endangered.

At 6:30 p. m. aid was asked from Lawrence, and Chief McPhee sent two Stutz 750-gallon pumpers. Assistance was also called from Billerica, Tewsbury, Dracut and Chelmsford. The fire was attacked from all sides and a water tower was placed in operation on Middle Street where it poured tons of water into the upper floors of the 5-story structure facing that street. A deck gun wagon was used on the Merrimack street side. Two Eastman deluge sets were used from the street. Bresnan nozzles were used through floors and cellar pipes in windows. During the height of the fire fifty lines of hose were in use, according to Chief Saunders. The chief was assisted by District Chiefs J. C. Sullivan and T. F. Saunders who responded on the first alarm and by District Chiefs P. H. Crowley and R. E. Burns who came on the general alarm. There were 250 Lowell firemen at the scene.

Nozzles in use on hose lines were 1⅛ and 1¼ inch and 2 inch on tower and deck guns. The hose was all 2½ inch cotton rubber lined except for about 400 feet of 3 inch hose. There were about 25 post hydrants and two Lowery hydrants in the vicinity of the fire. Water pressure averaged 70 pounds on the city mains. Pumps and hydrants of the Bigelow Carpet Company plant were also used with pressure from 85 to 90 pounds. Engines from Lawrence and Chelmsford drafted water from the mill canal. Nashua sent an engine to the scene, but its services were not required.

The following apparatus was in service at the fire: from the Lowell fire department, nine 600 gallon White motor pumping engines, one Ahrens-Fox 1000 gallon pumper, three Roberts hose wagons, one Knox hose wagon, one Hale water tower with deck gun, one 85 ft. aerial ladder truck mounted on a White chassis, fire patrol wagon, city service truck, chiefs' cars, and fuel wagon; two 750-gallon Stutz motor pumping engines from Lawrence; a Maxim motor pumper from Chelmsford; a Maxim pumper from Tewksbury; a 600 gallon White pumper from Dracut; and an American-LaFrance pumper from Billerica.

The Building of the Middlesex National Bank on the corner adjoining the Pollard store was saved after a hard fight and the flames were prevented from spreading to the Parker building adjoining on the other side. The heat was so intense that windows were cracked across the street and casings ignited.

Lieut. Edward Welch, Lieut. Joseph Fontaine, and Hosemen Michael Slattery and Arthur McLaughlin, of the Lowell F. D., received cuts from flying glass, Hoseman Fred Farrell, of Lawrence, received a fractured hand, and a sergeant of the army recruiting office, was cut by glass. Members of the water tower crew had a narrow escape from injury when a part of a falling wall just missed the apparatus. The fire was brought under control at 7:45 p. m., but continued to burn for hours longer.

The Pollard store was established in 1874 and employed 250 persons. Chief Saunders had advised the installation of automatic sprinklers, but the management thought the expense too great.

State Fire Marshal George C. Neal, in commenting on the fire, said: "I inspected the burned Lowell buildings five years ago and found one of them the worst I had ever been in. I then made a report recommending that laws be passed to require sprinklers in mercantile establishments, especially in basements."

In a report made to the legislature in 1920 Neal wrote as follows: "Mercantile business is mostly centered in the congested area of Lowell and many of the buildings are filled with

Water Tower and Deck Gun in Service at Big Lowell Fire.

light, combustible goods unprotected from fire, and until the firemen reach the scene a fire would have full sway, and once started it would increase very rapidly under such conditions.

"Six years ago this was pointed out as an element of danger by the committee on fire prevention of the National Board of Fire Underwriters. Since then the floor area in such places has been increased very much. This condition should not continue

longer; such buildings should be equipped throughout with automatic sprinklers.

"On the upper floors of some of the large buildings there are halls for the use of fraternal and social organizations with large banquet rooms. A fire once under way in the lower stories in some circumstances would be difficult for the firemen to reach."

On June 9, within a week of the Pollard store fire, the Lowell department was called upon to cope with another serious general alarm blaze which broke out in the basement of the Harrison block, formerly known as the Dartmouth block, a brick structure occupied by the Thompson Hardware Company and several other stores. A number of firemen were overcome while fighting this blaze which caused damage estimated at $200,000.

As a result of these two fires the insurance rates for the business section of Lowell have been increased ten per cent on buildings and fifteen per cent upon the contents of buildings.

HARRY BELKNAP.

Two Oil Fires Near Warren, Pa.

The Warren Refining Company at Venturetown, Pa., about one mile from Warren, Pa., was completely destroyed as the result of a fire that originated in the pump house. The blaze started from a gas explosion, and being in the pump house, it was impossible to use the water supply or to extinguish the flames with steam.

The building was constructed of brick with no sprinkler equipment, and it was not long before the fire communicated to nearby tanks and buildings. The Warren, Pa., department sent one pumper under the command of Chief C. M. Gordon—a line was laid to a nearby creek, from which suction was obtained.

Fire at the Warren Refining Company Plant Showing a Number of Tanks on fire

The fire started at 9 a. m., and assistance was rushed from Jamestown at about noon. It was soon evident that with the meager equipment and the lack of a water supply, the fire fighters could not cope with a fire of such large proportions. The firemen concentrated their work in saving the homes nearby; and they did.

The fire burned for eighty-one hours, destroying one hundred and fifty tanks with the resulting damage of close to $1,000,000. Several freight cars near the plant caught fire but they were saved. When the Warren firemen arrived, the pump house, boiler house, and the gasoline tanks were on fire; it was fortunate that no lives were lost in this fire.

About one hundred firemen with two 750-gallon American-LaFrance pumpers, prevented the spread of the flames. The men used 4,000 feet of hose equipped with 1 to 1¼-inch nozzles.

Within the same month as the previous fire, lightning that struck among the oil tanks at Warren, Pa., caused a fire that resulted in a loss of $150,000. The firemen had a hard fight to prevent the spread of the flames to nearby property. The closeness of one tank to another, made the extinguishment of the flames more difficult.

Clothes Lines Hamper Boston Firemen

A new obstacle has developed in the work of the firemen. At Boston, Mass., when the men were called to fight a fire, much valuable time was lost when the men had to stop and cut the lines before they could raise their ladders.

The lines were strung parallel to the building. Had they been placed at right angles to the building, which is the proper construction, the men could have placed the ladders between the lines, and they would not have lost valuable time.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Part of the Wreckage at the Warren Refining Company Plant

Week Ending August 6

CUSHMAN, ORE.—Five business establishments and adjoining property 50
COLUMBIA, S. C.—Farmers' and Butchers' Packing Plant damaged 55
EASTPORT, ME.—Factory No. 7, Seacoast Canning Company.. 80
GREENWOOD LAKE, N. J.—Mountain Spring Hotel destroyed. 60
BOCALUSA, LA.—Property of Southern Timber Company.... 800
PHILADELPHIA, PA.—Garage at 813 Ellsworth Street damaged 80
CLAIRFIELD, TENN.—Southern R. R. Station and adjoining property 40
WAXAHACHIE, TEX.—Brodhead, McCarter & O'Donnell garage 40
LAKE PLACID, N. Y.—Old Town Hall, owned by Brennan Brothers 40
DALLAS, TEXAS.—Building of American Ice Company..... 30
HEPZIBAH, W. VA.—Tipple of Corona Coal Company owned by L. S. Horner and Ben Britt..... 45
CANON CITY, COLO.—Canon City Auto Wrecking Plant and Vernon St. John Garage damaged..... 25
MAYBURG, PA.—Coke storage plant of Tionesta Valley Chemical Company 40
PHILADELPHIA, PA.—Woodturning plant owned by Adolph Mark, 2207 North Broad Street..... 80

Lightning Caused This Oil Tank Fire at Warren, Pa.

SARANAC LAKE, N. Y.—Saranac Lake Town Hall damaged.. 80
MILWAUKEE, WISC.—Milwaukee Truck Service Company, 620 Linus St. 40
SAN ANDREAS, CALIF.—Metropolitan Hotel and surrounding structures 170

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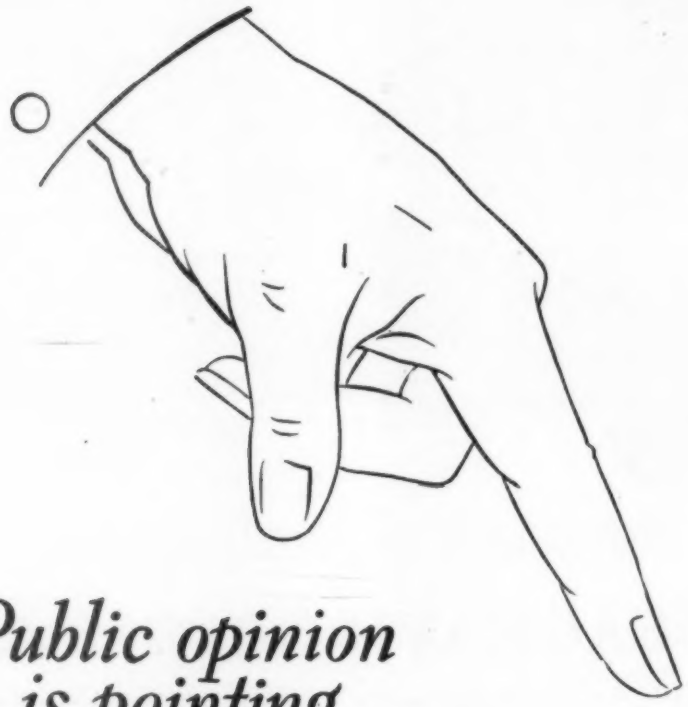

Public opinion is pointing –towards FIRESAFE roofs

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EVERETT, WASH.—Buildings of the Walton Lumber Company 400
EAST ROCHESTER, N. Y.—Business establishments in Speyer Block 95
JOHNSTOWN, PA.—Plant of Brown Equipment Company destroyed 35
DELPHI, IND.—Whiteman Brothers & Company elevator destroyed 25
HARPSWELL, ME.—Ocean View Hotel destroyed 25
PLYMOUTH, MICH.—Lumber warehouse of Towle & Rowe Company 40
WARSAW, MO.—E. T. Robins drug store and adjoining property 25
SHAWANT, WISC.—Factory of Iwen Box Company destroyed. 125
LINCOLN, IND.—Building and contents of Lincoln Elevator Company 25
FLORENCE, S. C.—Bridges Machine Works damaged 80
SOMERVILLE, MASS.—3-story brick block damaged 60
PORTLAND, ORE.—105-107 Second street, owned by L. D. Hunter, damaged 80
HARLINGEN, TEX.—Cotton compress of Arkansas Compress Co. 380
VERNON, CALIF.—(Suburban district of Los Angeles)—Three manufacturing concerns damaged 80
PATRICKSBURG, IND.—Business district destroyed 80
MARIA STEIN, OHIO—Tile mill and adjoining property destroyed 80
LUZERNE, PA.—Freedman Block destroyed 65
WAUSAU, WISC.—Business establishments destroyed 150
KANSAS CITY, MO.—Plant of A. N. Rice Mfg. Company 25
FAIRFAX, VA.—Ravensworth, historic home owned by Dr. Geo. B. Lee 60
WAMPUM, PA.—Two manufacturing plants destroyed 80

Week Ending August 13

LOS ANGELES, CALIF.—Plant of Cactus Mfg. Company damaged 40
SOMERVILLE, MASS.—Royal Furniture and Storage Company Company 70
DE SOTO, MO.—Two business buildings damaged 100
ATHENS, OHIO.—Three business establishments damaged 60
GALVESTON, TEX.—Store of A. Rosenthal & Sons damaged 40
ST. COME DE KENNEBEC, QUEBEC.—Eighty houses destroyed 400
PHILADELPHIA, PA.—Interior of Cookman Methodist Church. 200
MONTREAL QUEBEC.—Lumber yard of J. W. Duncan 50
MONTMAGNY, QUEBEC.—Saw mill of Geo. Blais destroyed 40
LOUISVILLE, KY.—Seven Market Street Business establishments 80
ARDMORE, OKLA.—Elevator of Ardmore Milling Company destroyed 80
WHITEWRIGHT, TEX.—Kimbell milling plant destroyed 60
DETROIT, MICH.—Brushaber Furniture Warehouse damaged 50
MINOOKA, PA.—Home of Mrs. Chas. Helkoski destroyed 25
MORRISTOWN, IND.—Plant of Allen Wilkenson Lumber Company 50
SAN FRANCISCO, CAL.—Basement of St. Germain Restaurant 80
PONTIAC, MICH.—Building at plant of Fisher Body Corporation 80
GARRISON, N. DAK.—Machine shop and tipple of Rupp Mine. 25
WARREN, PA.—Refinery of Valvoline Oil Company destroyed 50
WILKINSBURG, PA.—Three-story double dwelling, Beatty Street 30
BENTON, ARK.—Plant of Lena Lumber Company 25
CLINTON, ILL.—Biome building destroyed 25
CARLINVILLE, ILL.—Cacco-Scaparlo Grocery destroyed 30
NORTH BERGEN, N. J.—International Fireworks Building destroyed 40
EMEIGH, PA.—Rembrandt Peale Camp destroyed 25
PORTLAND, ME.—Plant of New England Grain Company destroyed 250
AUGUSTA, GA.—Richmond Lumber Company Plant 70
FERGUS FALLS, MINN.—Elevator owned by Red Milling Company 45
WILMINGTON, N. C.—Two business structures damaged 25
DENISON, TEX.—Portion of Denison Herald Plant 45
OAKLAND, CALIF.—Plant of Sulmock Furniture Company destroyed 150
COHASSET, CALIF.—Optimo Mill destroyed 250
WELLSVILLE, OHIO.—Factory of Geo. Pappas and adjoining property 80
CHESTER, S. C.—Baldwin Station and adjoining property 25
HARRISON, N. J.—Plant of Hall Manufacturing Company 80
ST. LOUIS, MO.—Woods & Down Box Company plant 65
EL PASO, TEX.—Building of Mine & Smelter Supply Company destroyed 40
ORD, NEBR.—Johnson-Peterson seed house destroyed 25
MILWAUKEE, WISC.—Portion of C. A. Krause Milling Company plant 150
PUNXSUTAWNEY, PA.—The Adrian Store of Rochester, Buffalo & Pittsburgh Coal & Iron Company 40
PADUCAH, KY.—Ferguson Mill destroyed 25
GRAND RAPIDS, MICH.—Factory of H. Elkenhout & Sons destroyed 40
ENGADINE, MICH.—Saw mill of Eddman Bell Company of Phila. 40
MADISON, WISC.—Sinaiko Brothers warehouse destroyed 40
WYTOPITLOCK, ME.—Several business houses and residences 40
SPOKANE, WASH.—Planing mill of Wendorf & Rogers Co. 65
SEATTLE, WASH.—Mill of Stetson & Post Lumber Company 50
ALTOONA, PA.—Stock of Stevens Webb Corporation, Tipton 35
KANSAS CITY, MO.—Plant of Concrete Steel Company 60
CHICAGO, ILL.—Consumers Coal Company yards 80

Week Ending August 20

ROCKDALE, ILL.—Home of C. P. Tindall destroyed 25
FOSTER, NEBR.—Several business establishments and residence 35
MOUNT TABOR, N. C.—Klutz Lumber Company destroyed 2 5
THREE RIVERS, QUEBEC, Canada—Catholic Church at Louisville destroyed 250
SAN FRANCISCO, CALIF.—Knights of Columbus Building, 18th Ave. 25
OMAHA, NEBR.—Hotel Fontenello, owned by C. Eppley 80
CENTRAL FALLS, R. I.—Rag and Waste Shop destroyed 50
MONTICELLO, ME.—Several warehouses near B. & A. station destroyed 80
SEATTLE, WASH.—Bowie Building damaged 40
GREENWOOD LAKE, N. Y.—The Mountain Spring House destroyed 80
HARRISON, N. J.—Plant of Hall Manufacturing Company destroyed 80
SMITHFIELD, UTAH—Empress Theatre building destroyed 35
FAIRVIEW, UTAH—Buildings in business district 25
DILLON, MONT.—Beaverhead Milling & Elevator Company property 60
DEMING, N. M.—Carson Building destroyed 30
MIZE, MISS.—Property of Thos. Riley 35
HOLLYWOOD, CALIF.—Plant of Century Film Corporation 325
PORTLAND, ME.—Portland Yacht Club and surrounding property 80
MILWAUKEE, WISC.—Property occupied by Milwaukee Waste Paper Company 40
DALLAS, ORE.—Lumber yards of Willamette Valley Lumber Co. 40
CROMPTON, R. I.—St. Mary's Catholic Church destroyed 65
CAREY, KANS.—Oil tanks of Prairie Oil & Gas Company 80
MUNISING, MICH.—Cleveland Cliffs Iron Company sawmill 80
BLANKET, TEX.—Three business houses destroyed 25
MIDLAND, ONT.—International Fireboard Plant destroyed 80
MADISON, WISC.—Paper warehouse, 24 N. Murray Street, destroyed 40
ENFIELD, N. C.—M. Cohen Department Store 25
CADDO MILLS, TEX.—Plant of Bass-Royce Lumber Company. 25
BROCKTON, MASS.—Building of National Tire & Rubber Company 25
NORTH THETFORD, VT.—Box factory of C. R. Kosford destroyed 40
NORTH BLOOMFIELD, N. Y.—Farm property owned by Geo. Gyler 25
INGERSOLL, ONT.—Copeland Garage, King & Oxford Streets. 30
BUFFALO, N. Y.—People's Macaroni Company, damaged 150
COCONUT GROVE, FLA.—Warehouse of Seminole Products Company 80
SAN BERNARDINO, CALIF.—Geo. M. Cooley Hardware destroyed 140

The New Siracode Sirens

The Siracode Signal Corporation, formerly the Heath Engineering Laboratories, of San Francisco have just announced their new line of fire alarm and apparatus sirens.

In the development of their fire apparatus sirens they have made a distinct change from the conventional type of construction. In speaking of this difference a representative of the company says: "For a period of over five years this company has experimented with an instrument which would be more efficient than sirens formerly built and which are made on a similar principle, viz., there is an open stator on the instrument with a number of holes inside of which a rotating disc revolves at high speed throwing the sound out in all directions at right angles to the stator. The sound produced comes out of the back of the instrument, and if the siren is on a moving piece of apparatus the faster the apparatus moves forward the more the sound is projected backward. The use of a siren is to assure effective clearness ahead by projecting the sound in the direction of travel. This important condition is provided by the Siracode, which projects a signal like the rays of a searchlight. The Siracode apparatus siren employs a parabolic rotor and deflector."

The large Siracode coding siren used for fire alarm signalling purposes both in small cities and towns and industrial plants is fitted with quick acting ballbearing shutters and when used in conjunction with the new relay transmitter which the company has recently perfected, it blows any range of code numbers from any standard fire alarm box system; or through the company's ward transmitter, whereby an area is divided into any number of squares, each one having a designated number, alarms transmitted from any particular ward sounds the ward signal number.

It is in places where there are no box systems that the ward relay is employed. In towns and cities having fire alarm boxes, the boxes are connected up directly with the siren and coding device.

The Siracode Signal Corporation have placed in service several of the coding systems and which are giving first class service.

F. G. Oakley Goes with Sanford

Mr. Fred G. Oakley, formerly with the Buffalo Fire Appliance Corporation and the American-LaFrance Fire Engine Company has joined the Sanford Motor Truck Company's force as Sales Manager. Mr. Oakley takes the place of Mr. R. B. Deutsch, who recently resigned from the Sanford company.

Additional Firemen for Philadelphia, Pa.—The assistant director of public safety of Philadelphia, Pa., has sworn in thirty additional firemen, and promoted others. Included in the promotions, is the son of Battalion Chief Michael Welsh, who was made licutenant.

To Form New Pennsylvania Association—Plans are being made to form the Cumberland County Firemen's Association of Pennsylvania.

"BATTLE OF FLAMES" STAGED BY DENVER FIRE DEPARTMENT

Captain Saves Fireman's Life in Fifty-Foot Fall—25,000 People See Show

MORE than 25,000 people in Denver saw the "Battle of the Flames" that was arranged by the Denver fire department at the stadium of the University of Denver. Many more clambered outside of the gates in an attempt to get inside. The large number of people who were unable to see the show made extra performances necessary.

The show was arranged as an entertainment feature for the convention of the Colorado State Firemens' Association, and to provide entertainment without taxing the local business men for the amusements. Any profits that will be made will be turned over to the pension fund.

The immensity of the project can be realized when one considers that the stage was 300 feet long by 250 feet, and the curtain for the stage was 370 feet long and fifty-six feet high. It was held in place by three-quarters of a mile of rope and one-quarter of a mile of steel cable. Music was furnished by 300 musicians, and 1,500 performers took part in the show. Illumination was provided by 500 arc lights, and 3,000 feet of water mains were laid special for the occasion.

The committee in charge consisted of Reuben W. Harshey, safety director; Chief John Healy, Edward L. Layne and Captains William J. Martin and William E. Guthner. Julius Pearse of the Julius Pearse Fire Department Supply Company was managing director.

In brief, the story of the battle is as follows: A boiler explodes in the wee hours of the morning and gray smoke is seen curling up from one of the buildings. Two boy scouts, who for some unaccountable reason were on the streets that early in the morning, discovered the fire and sent in an alarm. When the apparatus arrives, a second alarm is immediately turned in. Various fire companies roll in and assume positions and go through the various evolutions as though they were combating a real fire. Mock rescues are made, but the lack of realism did not lessen the hazard of the stunts.

Scene for the Burning of Denver in the "Battle of the Flames" Staged at the Stadium of the University of Denver.

In the course of the show, firemen attached a hook on the belt that they wore, to slide, and they slid to the ground in safety. One of the firemen, for some unaccountable reason, did not engage his hook with the belt, and in leaping from the supposedly burning building, there was nothing to break his fall. Captain Koska, who saw the incident and realized that the fireman was probably falling to his death, ran below the falling body and with outstretched arms, broke the fall. The impact hurled the captain to the ground, but the severity of the fall was broken. Upon examination of a physician, the fireman was ordered removed to a nearby hospital, where it was found that he had a wrenched back, a fractured rib and a broken wrist.

While the "Battle of the Flames" was the main spectacle of the show, there was vaudeville and acrobatic acts, and entertainment arranged by members of the fire department. The performance ended with a display of fireworks.

The officers of the Colorado State Firemen's Association are W. A. Shellbarger, president; F. H. Clark, 1st vice-president; E. W. Lindburg, 2nd vice-president; Ben Glaze, 3rd vice-president; H. E. Reed, 4th vice-president; E. W. Furry, historian; Clinton Turnbull, secretary; Fred C. Vertrees, treasurer.

The department feels indebted to Mr. Pearse, managing director, who shouldered the main burden of staging the show.

CORRESPONDENCE

Firemen as Washerwomen

To the Editor: I would appreciate very much if you could find space to insert in your valuable publication the following comments of interest to the members of the Public Safety Division in this city. In the interest of fair play and in justice to those members of the Fire Division in this city who give ungrudingly a brand of service that is akin to devotion, I take exception to the article appearing in the Newark Evening News, Saturday, July 3rd, 1926, under the caption "Declares Firemen Should Do Washing."

I am led to believe that the proper course in this case would be to ignore such abominable misrepresentations of civic duties. However, conscientious efforts in any organized body demands humanitarian defense against defamatory statements of this calibre. If the assertion as published is properly quoted—and there is good reason to believe it is, since it involves liability for civil suit—then a condition arises which certainly does not reflect upon the men of the department since they are subject to and submissive of all orders issued by those responsible for the department's proper functioning.

The term "Bum" applies to a loafer, who loaths the inspiration of self-sustenance and demands others to feed and cloth him, so it is obvious that the implication is not fitting to any class of labor, irrespective of whether that labor calls for little or much work. It is indeed remarkably strange that of all municipal servants, a fireman is so often chosen to ride the bumps of someone's jealous wrath, and the time worn explanation is given of his wearing out the chair seats when they are fortunate enough to enjoy this respite.

When a man enters the department he does so because it is his chosen vocation, the work which he feels he is best suited for; and numerous instances might be cited where he leaves a position that is more profitable and less arduous to accept this post. If the services of firemen could be dispensed with, there might be some just cause against the retention of the so-called "idlers," if there are any in a progressive department. In summing up of the actual duties performed by its members, those of their critics who indulge in the fanning-bee or mud-slinging seem to incorporate into their line of reasoning but one solitary thought, and that of occupying chairs in or about their stations. It is passing strange that these critics seldom, if ever, attempt to credit those deeds so unselfishly recorded in the hours that they do not occupy those chairs! The statement as published in the piece under question that "The Public Likes a Fireman Because He Puts Out a Fire About Once a Week" is, without question, undeserving of comment.

Those of the public who appreciate the worth of these men do so because they are broad-visioned enough to grasp the full scope of their calling and tabulate in their memory the endless sacrifices the firemen in the past have unflinchingly made, and will continue to make in the future.

Friends of the men in the fire service are not oblivious of the biting winds of zero weather, nor the snaring death-traps, of weakened floors, and crumbling walls and deathly back-draughts. They cannot pull the covers about their heads and wrap themselves in cozy comfort in the early hours of the morning, while the clanging of bells and clatter of apparatus reach their ears, without a prayer on their lips for the safety of the men they boost.

That's why the public likes the firemen, because they understand his devotion. Two of these so-called "bums" in a neighboring department across the river, paid the price of an honorable ambition when they sacrificed their lives in the discharge of duty, when their apparatus was involved in a collision. They were laid to rest in that city last Friday; and no doubt there are many sounding their praises—even their enemies.

The same sacrifices have been made in our own and other cities, and will be made again in the complicated hazards that exist today. The lonely vigil of the night watch in the light house at sea does not entail any greater responsibility nor any more manual labor than does the fire service. But is there anyone foolish enough to challenge the security its presence brings to the thousands its beacon guides safely? It is disappointing to imagine that the piece in question should be framed in such prominence on the front page of one of our leading newspapers. However, loyal men in the service are immune from any such libelous attacks on their character and will continue to render a class of service that all good citizens should be extremely proud of.

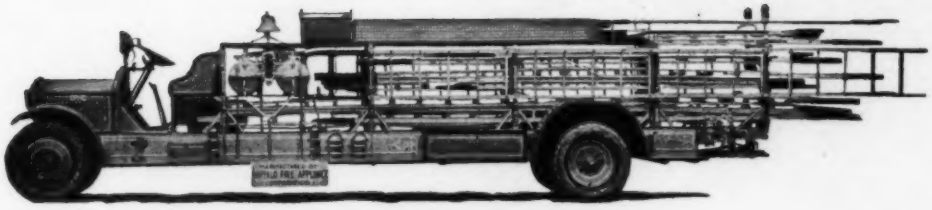
As a reader of your worthy publication may I ask you to publish this article in its entirety.

Very respectfully,

"FAITH IN THE SERVICE."

Newark, N. J., July 5, 1926.

BUFFALO



BUFFALO

Modern "Built-to-Your-Order" Apparatus

is Making Good Wherever Placed in Service

because every piece of apparatus is designed by our experienced fire apparatus engineers in conjunction with the local fire officials to meet the specific requirement of the particular department or municipality making the purchase—and only the highest grade materials and workmanship go into the construction.

Every city, town or community selecting Buffalo apparatus is therefore certain to get dependable apparatus of just the type and size that will most effectively meet their own fire protection requirements.

Moreover, Buffalo Apparatus is economical. Our method of doing business and our large modern plant enable us to provide quality apparatus at comparatively low cost. This makes possible the immediate purchase of new apparatus with limited funds, or saves money that can be used to purchase other needed equipment or supplies.

May We Tell You More About Buffalo Apparatus and the Buffalo Plan?

BUFFALO FIRE APPLIANCE CORP.

Main Office and Factory: Buffalo, N. Y.

BUFFALO

AMERICANS SHOULD PRODUCE THEIR OWN RUBBER. Harvey S. Firestone

Cut-away section of a Firestone Gum-Dipped Pneumatic Tire shows a single cord greatly magnified, and untwisted into fifteen smaller cords composed of many little fibers, all thoroughly saturated and insulated with rubber by Gum-Dipping.

Gum-Dipping—

The Extra Process for Extra Miles and Extra Safety for Fire Apparatus

Firestone Performance For Fire Chiefs

G. W. Henze, Fire Chief, Rochelle, Ill.
"Our drivers comment on the easy steering qualities and the safety they feel with Firestone Gum-Dipped Pneumatics."

J. J. Baker, Pres., East Greenbush Fire Co., East Greenbush, N. Y.
"Firestone Gum-Dipped Pneumatics give the best service in holding air pressure and best traction on concrete, macadam or dirt roads."

Fred B. Wilcox, Fire Chief, Centralia, Wash.
"Firestone Gum-Dipped Pneumatics give unusual traction and resist skidding on both wet and dry paved and unpaved streets and have great resistance against moisture, wear and ageing."

J. D. Weisinger, Fire Chief, Enid, Okla.
"Firestone Gum-Dipped Pneumatics are good merchandise properly serviced. We have had our third fire truck equipped with them."

B. F. King, Fire Chief, Jackson, Mich.
"The tread design of our Firestone Gum-Dipped Pneumatics is very effective on wet pavements. We have not had a chain on them this winter."

Gum-Dipping, the extra Firestone process, gives to Firestone Pneumatics greater stamina—longer mileage—and added safety. Gum-Dipping goes to the very heart of every cord, thoroughly saturating and impregnating every fiber with rubber—minimizing internal friction and heat, one of the most persistent causes of tire failures.

The special Firestone Non-Skid tread of scientifically designed angles and edges gives to Firestone Gum-Dipped Pneumatics, the dependable road-grip that holds fire apparatus on slippery roads—reducing skidding in traffic and increasing braking efficiency.

Still greater protection is assured by the special Steam-Welding process that makes Firestone Tubes an endless air tight unit. Your Firestone dealer can give you interesting facts about Firestone performance for fire chiefs—see him.

The Mark of Quality

MOST MILES PER DOLLAR

Firestone

Gum-Dipped Pneumatics for Fire Apparatus

OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

Rockland County Firemen Meet

The fourteenth annual meeting of the Rockland County Volunteer Firemen's Association was held at Suffern, N. Y., on Wednesday, August 4.

President William Peterson presided, and the invocation was given by Rev. Charles P. Bispham. Rev. Joseph R. Alten, president of the Southern New York Volunteer Firemen's Association, conducted the memorial services and asked that this association cooperate with the southern New York firemen in their work. William Swarthout, treasurer of the state association, spoke concerning the home and endowment fund.

The feature address of the convention was made by Captain Sidney Johnson of the New York Fire Patrol. He spoke on "Your Fire Department, Fire Prevention and Fire Salvage Operations." In his talk, he touched on the standardization of the hose threads, the establishment of schools of instruction for the suburbanite firemen, and the wisdom of carrying on fire prevention campaigns. He said that each fire chief should carry on salvage work.

A resolution was introduced by Capt. Paul Babcock for the association to endorse the principles of fire prevention and fire salvage operations, and to commend the principles to the other bodies with whom the association may be affiliated.

The parade and dinner went through according to the plans of the committee. Ex-chief Fred R. Horn of Nanuet was elected president; Judge Morris Meloney of Haverstraw, vice-president; Ira Hartwick, re-elected secretary; Gus Joachim of Haverstraw, re-elected treasurer; Victor N. Frusen, financial secretary. William R. Sherwood, editor of the *Rockland Leader*, was elected director.

The new president pledged that the monthly meetings will not be the customary dry business meetings. Henry Boss, past-president of the association was presented with a Howard watch for his efforts in raising funds for the association. Mr. Peterson, the retiring president, was presented with a gold past president's badge.

The next large event of the Rockland County association will be the biennial inspection and parade of the Nyack fire department on September 22.

How to Fight a Forest Fire

The United States Department of Agriculture has issued instructions that will be of interest to the volunteer firemen in the lumber and wooded sections of the country, on how to fight a fire that has started in forested country. In any event, the department pleads for cooperation from the public, and assistance in maintaining fire records, by reporting all fires that the public has fought, no matter how trivial.

Take immediate action on any unattended fire you find. If it has covered only a few square feet and is smoldering, put it out with water. If water is not at hand, use sand or clean dirt.

Pour water on the fire, and then with a shovel or stick stir the embers, dirt, and water together until it is well puddled; then pour on some more water. Drowning a fire with water is the surest way to kill it.

If it is spreading in grass and leaves, it may be quieted by beating it with gunny sacks or a wetted heavy coat.

If the fire is on sandy soil, such as occurs in Michigan or Nebraska, take a shovel and "sand" it—that is, take a shovelful of sand and throw it along the fire parallel to the burning edge. One can kill down a lot of fire very rapidly in this manner.

In the mountain region sand is not often available and shovels and axes must be used and fires stopped by cutting a trench around the outside of the burning area. Use the axes to cut any logs in two and to cut down trees which are in the way where the trench is to be made. Then take a shovel, or, if there is heavy sod and you have a mattock, use that to clear away all the needles, duff, and grass and make a trench about 12 or 14 inches wide in the clearing that has been cut.

This is what fire fighters call the "fire-control line." It is necessary to make the trench only deep enough to get to mineral soil. The object is to remove the inflammable material ahead of the fire so that when it burns up to the trench it has nothing more to feed on and dies out.

If the fire is traveling slowly, try to put the first line in front of it and later trench the sides and rear.

If it is running rapidly, it is advisable to go some distance ahead to an old trail or road or open ridge to put in a line.

If it is a runaway, going up a steep side hill or fanned by a high wind, start what is known as a "flank" attack; that is, begin building the trench on the sides from the rear and keep following around the fire until it is surrounded.

Throw the needles and litter and cuttings from the trench away from the fire. If you throw them toward the fire, that much more fuel is added to increase the heat when it burns up to the line.

As the fire comes up against the line it will try to jump in spots, and right here all the joy of battle may be experienced.

Volunteer Firemen Show Speed in Contests

A number of good records were made in the various contests held in connection with the tournament of the Nassau County Volunteer Firemen's Association which was held at Great Neck, L. I., N. Y. Upper—A fireman competing in the ladder contest. Center—A hook and ladder truck getting into action. This contest was won by Hempstead, L. I. Lower—Some of the hose contests furnished a great deal of amusement for the crowd.

It will be hot and smoky, but the satisfaction of holding every foot of trench will repay the effort.

If the fire wins at any point, it is necessary to repeat the same tactics until it has been subdued.

When the control line has been completed and the fire checked, do not think the job is over. The fire is only looking for a chance to escape and start the rampage all over again. Now is the time to strengthen any weak-looking spots in the line—kill down all fire near the line, in stumps, roots, and logs. Do this with water if it is easily available; if not, cover the burning spots with clean dirt.

Cut down all snags and dead trees that are afire and fell them into the fire. Otherwise when the wind comes up each snag will develop into a torch from which new fires will start outside the lines.

See that the lines are constantly patrolled. The fire will sneak across the line in an old root and start anew, or the wind may pick up a spark and start a new fire unless there is constant vigilance.

When the fire has been put out near the edges, keep working around it toward the center, killing down every smoke and ember.

Before deciding all danger is past at the control line, feel the ground wherever there is the least possibility that fire may be left underground.

Very frequently there is fire in some old root that is not smoking and gives no evidence to the eye, but if left may later be fanned by the wind and cause a new fire to start.

Immediate action is imperative. Fires attacked quickly can nearly always be put under control in a few minutes.

Quick action should be taken on the larger fires as well, and no matter what time of day they occur an attempt should be made to stop them.

If the job is not completed the first day, plan to start work on succeeding days at daylight. At this time fires are quieter than at any other period, there is moisture in the air and much more effective work can be done then than during the heat of the day.

If there is more than one man on the fire and it is necessary to have more help, send only one as a messenger. Others can do effective work by staying on the job.

With your equippage you should have an ax, a shovel, and a canvas water bucket. These are essential for camping and will prove a big asset in working on fires.

If the tools you have are insufficient, open up a Forest Service fire cache where tools are maintained for fire use only.

Whether you are successful or not in putting the fire out, please report the case to a forest officer if he can be reached easily. If not, report the incident to a local settler or official, and it will be appreciated if you will also leave your name and address. The Forest Service likes to know its friends and needs the data on all fires for its records.

The Hazard of Coal Storage

An interesting fire occurred in a fireproof apartment house in New York City from the improper storage of coal. The fuel was designated as No. 1 Buckwheat and consisted of sixty per cent soft and forty per cent hard coal. The bin was located under the sidewalk and was separated from the main portion of the basement by a twelve-inch brick wall which, on one side, formed the boiler setting.

The boiler was of the high pressure type and undoubtedly radiated a large amount of heat to the coal. On the bin side, the wall was further insulated by the addition of a six-inch hollow tile.

Vapor was observed rising from the eighty tons of coal which was piled fifteen feet high, and the superintendent after vainly battling with the fire for four hours called the fire department who extinguished the fire by inserting a stream into the coal pile. With the exception of five tons of coal, no damage was done.

The lesson to be learned from this fire is that coal should be stored so that there is no danger of heat radiating to the pile from outside sources. When vapor is discovered rising from the pile, the coal should be redistributed into a flat pile not exceeding six feet in depth. It is a bad policy to wet the pile until the coal has actually burst into flame. Often when the vapor is rising, the application of water will furnish the necessary oxygen to start combustion. The use of wooden partitions in coal bins of this size is particularly objectionable, and care should be taken that no material subject to spontaneous combustion such as oily waste, rags and the like should be stored near the coal.

Marysville, Cal., Increases Pay of Firemen—The salary of the firemen of Marysville, Cal., who are on full time duty have been increased $10 a month, and the chief received an increase of $20 a month. This will bring his month salary to $170.

Program, Pacific Coast Fire Chiefs

The 33rd annual convention of the Pacific Coast Association of Fire Chiefs is to be held at Fresno, Cal., on October 11 to 15. Judging by the following very full program, which has been tentatively arranged, the members will be kept busy from start to finish of the meeting, with a large assortment of practical papers and discussions to occupy their attention. President Armstrong, of the International Association, is expected to be present and to address the delegates. The convention precedes that of the I. A. F. E. by only a few days, and a large delegation will proceed to New Orleans on the conclusion of the Pacific Coast convention. The tentative program follows:

Monday Evening, October 11

8:00 p. m. Special Entertainment: By Los Angeles Live Wires, Illuminated Fire Drill by Fresno Fire Department.

Tuesday, October 12

9:30 a. m. Opening Session and Public Officials' Day. Music by Oakland and Pasadena Fire Dept. Bands. Address of Welcome, Mayor A. E. Sunderland. Response, Chief E. F. Coop, of Pasadena, chairman, Executive Committee.

12:00 noon. Official photograph.

12:15 p. m. Big civic luncheon. Addresses: Governor Friend W. Richardson, Sacramento; Mayor James Rolph, Jr., San Francisco; Mayor George Cryer, Los Angeles.

2:00 p. m. Afternoon session: Public officials, meeting for mayors, commissioners, councilmen and city managers.

Address: "Function of a Fire Commissioner," by Commissioner Frank Colburn, Oakland. Discussion, Commissioner C. A. Bigelow, Portland.

"Municipal Garbage," by John Edy, city manager, Berkeley, California, president City Managers' Association of California.

"First Aid at Fires," by Chief Thos. R. Baird.

Demonstrations by Fresno Fire Department and Standard Oil Company First Aid Teams.

7:30 p. m. Round table discussion, "Oil Fires."

8:00 p. m. Five-minute papers: "Garage Hazard," by Fire Marshal Edward Grenfell, of Portland; "Dry Cleaning Establishments," by Fire Marshal M. J. Hannan, San Francisco; "Filling Stations," by Fire Marshal Robt. L. Lang, Seattle; "Storage of Explosives," by Frank C. Kispert, Oakland; "Automatic Sprinklers," by Maj. W. Cartwright.

Wednesday, October 13

8:30 a. m. Band music, community singing and vocal selections.

9:00 a. m. Address: James Armstrong, President, International Association of Fire Engineers. A message from the International.

10:00 a. m. Paper: "Proper Working Pressures," by Ralph J. Scott, Los Angeles.

11:00 a. m. Memorial services.

1:30 p. m. Fire alarm telegraph meeting—C. A. Savariau, chairman. Paper by Carl E. Hardy, Supt. of electricity, Oakland. Discussion.

3:00 p. m. Exhibits—Demonstrations: Amdyco and others.

7:30 p. m. Master mechanics' meeting—Ed. Henrys, master mechanic, Los Angeles, chairman. Paper by E. L. Burtner, Fresno. Paper by Sam Birmingham, San Francisco; "Standardization of Hose Couplings," by W. J. Phillips, Portland, Ore. "Necessity for Skillful Engine Operation," by Robt. J. McNeish, Los Angeles.

Thursday, October 14

8:30 a. m. "Co-operation of Water Departments," by C. B. Jackson, Fresno.

9:00 a. m. Proper drilling of men: Paid, J. H. Carlisle, Vancouver; volunteer, Tom Graham, Corvallis, Ore.

10:00 a. m. "Volunteer Organization and Equipment," by Charles F. Ferguson, El Centro.

10:30 a. m. The remainder of this session will be devoted exclusively to discussion on "Volunteer Fire Departments," led by Joe Schlanser, Mt. Vernon, Wash.

2:00 p. m. Trip to Giant Forest. By Tulare County Firemen's Association.

Friday, October 15

8:30 a. m. "Relationship of Building to Fire Departments"—Speaker to be selected.

9:00 a. m. "Fire Fighting from the Hoseman's Point of View" (Author: A Hoseman to be selected and kept secret until he appears.)

"Arson," by E. H. Enos, Chief of Investigations, Fire Prevention Bureau, Los Angeles.

"Prosecutions," by E. R. Newton, fire marshal.

"Traffic Problems," by Chief G. M. Mantor, Seattle and Dan O'Brien, President, International Association of Police Chiefs, San Francisco.

Election of officers and installation, by Past President Thos. R. Murphy.

Leave Friday evening, 10:00 p. m., by special train for International Convention, New Orleans, October 18-22, 1926.

Special entertainment under the supervision of the Ladies' Committee will be provided for all visiting members of the fair sex.

Steelton, Pa., to Purchase Fire Apparatus—Steelton, Pa., will purchase three pieces of Mack fire apparatus.

MOUNTAIN INN, FRAME, IS SITE OF FATAL FIRE

TANNERSVILLE, N. Y., July 14.—(AP.)—Eleven bodies had been taken from the ruins of Twilight Inn as searchers tonight continued to fight their way through burning debris of the hostelry that last night housed a Catskill Mountain summer colony of wealthy New York and Brooklyn residents. The list of missing had been reduced to 18.

State Troopers on Guard

State troopers, aided by 50 New York City policemen, on vacation at this

"DELUGE" at Twilight Inn

fought against insurmountable odds for 10 hours, pumping water from a creek 1600 feet distant . . .

Read Chief Hewitt's letter : —

The Prospect Fire Engine Co.,
Prospect, Ohio.

Dear Sirs:

On July 14th at 12:45 A. M. I got a call to Twilight Inn at Haines Falls. Made the run of five miles in 7 minutes and pumped water from a creek 1600 feet away and 200 feet below the road level, at a pump pressure of 180 lbs. for 10 hours, not shutting down once during that time.

I wish to state that this performance was far above the expectations of any one in town. On returning to quarters I found the motor and pump in perfect shape.

Thought that you would like to hear about this as the conditions were very bad. The building was a total loss and there were 21 dead and 18 injured. You may use this letter in any way you want and I will answer anything else you wish to know.

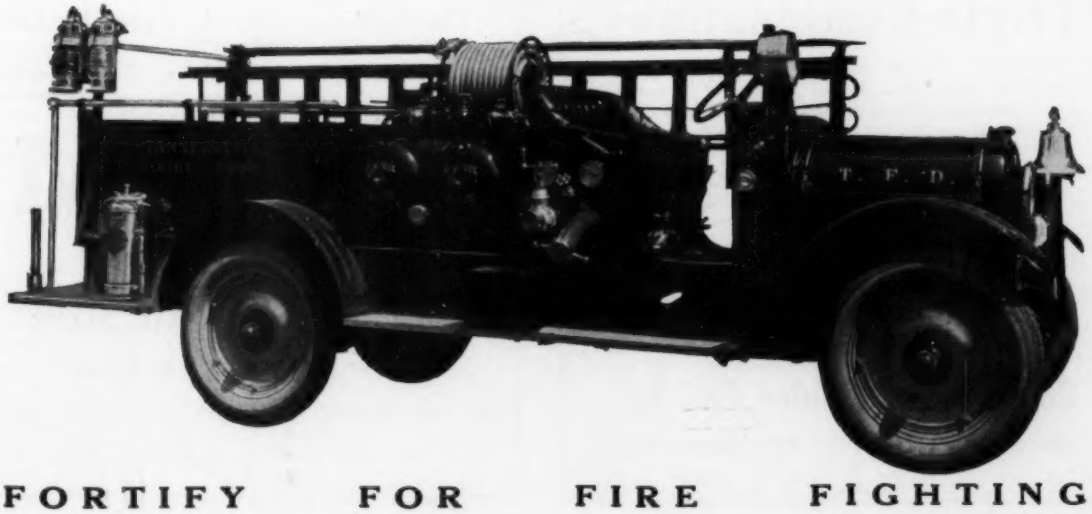
Sincerely yours,
Signed, Arthur W. Hewitt, Eng.,
Tannersville Fire Dept.,
Tannersville, New York.

NOTE:

This "Deluge" Reo Combination Truck was delivered to Tannersville March 10, 1924. About one year ago it was crowded off the road, turning completely over. No injury was done the pump and the chassis was repaired. Chief Hewitt's letter is certainly a recommendation for its dependable service.

THE PROSPECT FIRE ENGINE COMPANY

Prospect, Ohio



FORTIFY FOR FIRE FIGHTING

Known the country over as a sound investment in fire protection

Four of the 159 MACKS in the New York City fire service

Mack Fire Apparatus

Mack fire fighting units include pieces specially designed for rural and small town service as well as for the requirements of the largest Metropolitan fire departments.

Before you buy new equipment write for catalogs illustrating and describing the complete line of Mack Fire Apparatus.

One hundred and eight direct MACK factory branches are at your immediate service.

MACK TRUCKS, INC.
INTERNATIONAL MOTOR COMPANY
25 Broadway New York City

Branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY," or "MACK TRUCKS OF CANADA, LTD."

Triple Combinations

Continental Six cylinder motor, 100 gallon Booster Tank, 500 gallon Pump, 1200 ft. Hose Body, complete Miscellaneous equipment. Motor recently passed twelve hour Endurance test conducted by National Board of Underwriters. Built and equipped for service.

We offer 300, 350 and 500 gallon pumping units.

Write us when interested.

Combination Ladder Co., Inc.
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Absence of Trouble
One VAC-M Arrester Installation will convince you.
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FIRE APPARATUS
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INDUSTRIAL PLANT PROTECTION

An Oil Company's Fire Department

By C. HENRY AUSTIN*

AT the main station of the Standard Oil Company (Indiana), in Milwaukee, Wis., one of the city bulk plants, the storage tanks, the warehouse and the garage are grouped within the radius of one block. The proper method of providing adequate fire protection for all the employees working in these various departments, for the expensive equipment involved, and for the petroleum products in the storage tanks was an unsolved problem for some time.

On March 17, 1925, a volunteer fire fighting unit was organized among the employees of the garage, located at Walker and Barclay Streets. The plan of organization as outlined by the rule book, "Information for Employees," contemplates the stimulation and development of an individual interest on the part of each employee beginning each of them a part in the unit, either as member or substitute, and by holding regular fire drills.

The unit is composed of 13 garage employees who are prepared to handle small fires successfully and to hold larger fires in check until the city fire department can arrive. Each member of the unit has a substitute who is prepared to replace any member in the event of that member's absence.

The equipment consists of one 40-gallon Foamite Chemical Engine mounted on wheels; three 2½-gallon Foamite Extinguishers; and four 1-quart hand fire extinguishers. Three men handle the 40-gallon outfit—two men to pull at the handles and a third man to handle the hose and nozzle. The other pieces of equipment are handled by the rest of the unit.

A system of signals covering the locations of the various departments in the Walker-Barclay Street group has been evolved whereby, in the event of fire, the exact location of the fire is communicated at once to all employees in the group. The signals are sounded by a whistle attached to an air conpressor located on the first floor of the garage. Just above this air compressor the entire system of signals is painted in red letters. This display makes it practically impossible for the person pulling the whistle to give the wrong signal for a designated location.

When the location of a fire is reported to the garage the captain, who occupies the stock room next to the garage office, goes immediately to the whistle and sounds the alarm. All machinery is then shut off immediately, and the members of the unit drop all work and fall into place. The captain leads the unit to the fire, followed by the three men with the 40-gallon outfit who, in turn, are followed by the remaining members equipped with hand fire-fighting equipment.

The man in charge of the service elevator goes immediately to the elevator when the alarm is given, either to lower or raise the elevator according to the location of the fire. In the event of fire on the upper floor of the garage, where motor equipment is repaired, the elevator is lowered to the first floor in order to pick up the fire-fighting unit and be prepared to get the equipment out of danger. If the fire is at some other location, the elevator drops to the first floor, and the operator joins the unit with a hand fire extinguisher. The employees not serving on the unit leave the building through the fire doors.

Trial runs are made every two weeks, and a record of the time required for the run is kept. All the employees in the group have taken a keen interest and made some very good records. Recently this unit was ready for action with all equipment in play in the can oil room of the tank department, a distance of 300 feet from the garage, in 45 seconds after the alarm had been given.

Under the supervision of the superintendent of equipment, all fire-fighting equipment is given a weekly inspection in order to insure the efficiency of the apparatus.

Proper protective measures have also been taken for the office employees by the organization of a fire drill at the main office. The office covers two floors, and exits through two systems of elevators and a side wall fire escape. Three fire bells have been installed at locations that will inform the employees in all departments in the event of fire. Safety lanes have been marked out among the desks so that the exit is conducted in an orderly fashion. There are fire marshals on each floor who take charge in case of fire and conduct the exits. Fire drills are held at regular intervals and a record is kept of the time required to empty the office. At the present time it takes approximately one minute to empty the two floors.

Thus, through the operation of these two systems of fire drills, the employees in the clerical and physical departments have co-operated with the safety department in providing adequate fire protection for themselves and their equipment.

*From *The Standardolind Record*, by permission of Standard Oil Company (Indiana)

Employees Trained in Prone Method

Realizing the importance of the Prone Pressure Method of Resuscitation in saving human life, a company-wide campaign of instruction is now being carried on by the Commonwealth Edison Company, Chicago, among its employees, and within a short time more than 9,000 of these employees will become proficient. Twenty-three departments and units of the organization had received instruction in the method prior to May 25. The work is being actively Conducted by Charles H. Davis, superintendent of the Edison Safety Division, and by Henry W. Lueck, assistant superintendent.

Decision to carry on this extensive campaign of instruction was brought about through the interest manifested in the prone pressure method by a few small groups of employees. Other units, hearing of the valuable instruction available, sought permission to receive the lessons also. Interest rapidly grew to such an extent that the blanket campaign was adopted. In view of the approach of summer and the wide opportunities for employees to spread knowledge of the prone pressure method among their families and friends at bathing beaches and in emergencies, it is estimated that not less than 18,000 persons will soon have this expert ability to save life.

Demonstration of Prone Method of Resuscitation by Edison Employees

Boston Limits Speed of Apparatus

Eugene C. Hultman, fire commissioner of Boston, Mass., has issued an order that the fire apparatus must reduce its speed, and that the firemen must not operate the apparatus at a speed greater than twenty-five miles an hour. In case of reckless driving, the officer of the company, and the driver would be held responsible.

In the downtown section, when conditions are favorable, the apparatus must not exceed twenty miles an hour—otherwise, the machine must not be operated in excess of fifteen miles an hour.

Chemical Hose on Water Lines Saves Work

E. A. McGranahan, chief of the Wheeling, W. Va., fire department, furnishes the following information concerning the use of chemical hose on ordinary water lines:

"In our department we do not carry any smaller hose than the 2½-inch, except the ¾-inch chemical hose. I have taken the tip of a 1⅛-inch nozzle and had threads cut on it, with a ring to protect the threads, and when we are cleaning up at a fire, or have an inside fire, we lay in our 2½-inch hose, put on the 1⅛-inch nozzle, take the ring off the tip, get one or two sections of ¾-inch hose, and screw it on the tip."

FIRE DEPARTMENT ACTIVITIES

Cheswick, Pa., Chief Resigns—A. W. Kennedy has resigned as chief of the Cheswick, Pa., department.

Alphus, N. Y., Organizes Department—A fire department has been organized in Alphus, N. Y.

Bretons Fight Fire With Cider—While fighting a fire at Taverny near Lorient, France, the water supply of the village failed and quantities of cider were used to extinguish the blaze.

Williamsburg Wants Farm Protection Equipment—A campaign is being started in Williamsburg, Ia., to purchase apparatus that will enable the town to protect the rural sections.

Wage of Rock Island, Ia., Firemen Increased—The salary of the firemen of Rock Island, Ia., has been increased $5 a month, and the salary of the chief has been raised $10 a month.

Bakersfield, Cal., to Protect Oil Tanks—Bakersfield, Cal., is spending $35,000 to protect oil tanks from being set on fire by lightning. Each oil reservoir will be covered by a net work of wiring placed every four feet above the roof.

Pittsburgh, Pa., Battalion Chief Honored—More than 650 city officials and business men of Pittsburgh, Pa., attended a testimonial dinner at the Y.M.H.A., to honor Battalion Chief Saul Klein who has been in the city service for eleven years.

Springfield, Ill., to Have New Station—The new fire station of Springfield, Ill., will be completed by December 1. When completed, the station, will house Companies 2 and 3, consisting of sixteen men.

Chicago, Ill., Promotes Two to Division Marshals—Two battalion chiefs in the fire department of Chicago, Ill., were raised by Chief Seyferlich and Commissioner Connery to the ranks of division marshals. At the same time, a number of other promotions and transfers were made.

Paterson, N. J., Man Held in Graft Case—A city official of Paterson, N. J., has been held in a charge of extorting $100 from a would-be fireman. The amount was paid on the understanding that the official would fix it so that he would be able to join the department.

Rochester, N. Y., Firemen Crushed—While speeding to answer a fire alarm, a fireman riding on the apparatus of Truck Company No. 3, slipped and was crushed to death by the wheels of the truck. The fire resulted in slight damage and was caused by some children throwing a fire cracker against a house.

New Fire Companies for Detroit, Mich.—Three new fire companies have been placed in service in Detroit, Mich.—a double company to be known as Engine No. 51 and Ladder No. 24, and Engine No. 52. A series of promotions have been made with opening of the new stations.

Varied Calls by Chicago Department—Among the strange calls received by the Chicago, Ill., department for one month were requests to rescue cats, open homes for those who had lost their keys, request to paint a flagpole and a request to sprinkle a stretch of roadway in order to settle the dust.

Mount Vernon, N. Y., Fights Nest of Birds—The fire department of Mount Vernon, N. Y., was called to route a flock of grackles that made their home in the trees of one of the main streets. Several well directed hose streams put the birds to flight.

Firemen Discharged for Working at Bar—Two firemen of Detroit, Mich., were discharged for working behind the bar of a saloon during their off hours. Previous to being discharged, the men were fined four days pay for reporting late for duty but they have taken the matter to court.

Fire Surgeons to Hold Convention—The National Association of Police and Fire Surgeons and Medical Directors of Civil Service Commissions, of which Dr. Harry M. Archer of the New York fire department is president, will hold their fifth annual convention in Philadelphia on September 21.

Extinguisher Dropped from Plane Causes Panic—A fire extinguisher which fell from some airplane flying over Seattle, Wash., and which exploded as it fell on one of the main thoroughfares, caused a momentary panic. Many thought that a bomb has been dropped.

Sun Shades Hazardous to Smokers—At present there is a craze of wearing celluloid eye shades. W. P. Burke, manager of the Syracuse, N. Y., office of the Eureka Fire Hose Manufacturing Company has written to the local papers calling the public's attention to the hazard of lighting smokes while wearing these shades.

Minneapolis Holds Reception in new Station—A reception was held for the city officials and other guests in the new fire station constructed in East Minneapolis, Minn., and the people are still talking about the excellent manner in which the firemen played the part of hosts. Lunch was served in the new kitchen, and informal dancing ended the party.

Eton Students Drill in Formal Attire—The students of Eton, England who dress in the conventional Eton jacket, striped trousers, patent leather shoes, and with their tall silk hat jammed on the top of their heads, refuse to depart from their customary dress during fire drills. They are trained in the duties of a volunteer fireman, and they leap into a net dressed in their immaculate town clothes.

Gamewell Company Has Satisfactory Year—V. C. Stanley, president of the Gamewell Company reports a most successful year for the period ending June, 1926. The factory was reopened after inventory was taken, and repairs made. Orders were recently received from Woonsocket, R. I., New Brunswick, N. J., Dearborn, Mich., Abiline, Tex., Bellingham, Wash., Wilson, N. C., Johnstown, N. Y., Honesdale, Pa., and Sebring, Fla.

Home Brew Bottler Refuses Firemen's Aid—When the firemen of Manchester, Conn., answered an alarm from a tenement house, they had the door shut in their face by the mistress of the apartment. She told them the fire was out but the chief insisted on inspecting the place to see if there were any flames between the walls. The chief found the woman bottling home brew.

Firemen Can't Change Habits of Squirrel—Some one in Salem, Mass., called up the central fire station to notify the men that a squirrel was stranded in a tree top. With the exception of one man, the firemen were attending fire school, and a report was therefore made to the chief there. The alarm was "laughed off" and fifteen minutes later the kind hearted lady again called up. The firemen believe that they should educate the public in the fact that a squirrel is perfectly at home in the tree tops.

Many Orders Placed for Mack Apparatus—Among the recent orders placed for Mack fire apparatus are the following: city service truck with pump for Great Neck, N. Y., and one for Hillsdale, N. J.; 400-gallon pumpers for North Hampton, Pa., Folcroft, Pa., Hyde Park, N. Y., Lyndhurst, Ohio, and two pumps for Chicopee, Mass. A 700-gallon pumper for New Brunswick, N. J.; 750-gallon pumper for Shelbyville, Ky.; four tractors for Chicago, Ill.; a city service truck for Richfield Springs, N. Y., and a combination chemical truck with a deck pipe for Lynbrook, N. Y.

Fire Alarm Notes

Fire Siren Installed at Margaretsville, N. Y.—A 5 h.p. electric siren has been installed at Margaretsville, N. Y.

New Siren Erected at Lowville, N. Y.—A fire siren, which the village board ordered some time ago, has been erected on the fire house in Lowville, N. Y.

Sycamore, Ill., Installs New Alarm—Under the direction of Chief Burzow of Sycamore, Ill., a new Gamewell fire alarm system will be installed.

New System for Decatur, Ill.—A new system of transmitting alarms by telephone has been established in Decatur, Ill. The operator at the fire station will receive the alarm direct.

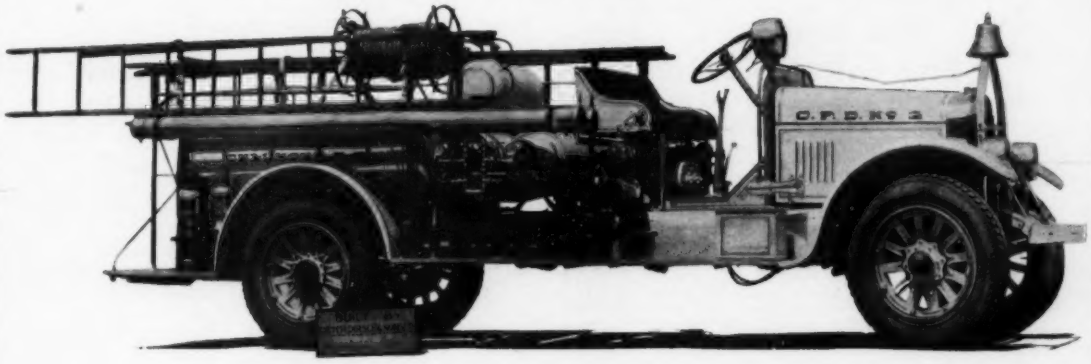
Long Beach, N. Y., Orders Fire Alarm Boxes—An order has been placed by Long Beach, L. I., N. Y., for the installation of additional fire alarm boxes in the western section and in Eastholme.

New Transmitter Installed in Allentown, Pa.—A new four-dial manual transmitter has been installed in Allentown, Pa. It was supplied by the Gamewell Fire Alarm Company and replaces the inadequate master key in service for many years.

Labor Strike Delays Cleveland Fire Alarm—The strike of the painters and glaziers has delayed the completion of the new fire alarm system of Cleveland, Ohio. The new system has been installed at a cost of $90,000 and will replace a fire alarm system installed forty years ago.

"PIRSCH-SPECIAL" 500 GAL. PUMPER

DELIVERED TO CHAUMONT, N. Y.



Also built with Copper Booster Tanks in Place of Chemical.

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to every fire officer interested in up-to-date methods and equipment

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Comprising an abstract of the advanced practical instruction in up-to-the-minute Fire-Fighting methods given officers of the N. Y. Fire Dept. Fire Chiefs in cities, large or small, are increasing the efficiency of their men by placing this valuable book in every station. And with its help, too, fire department officers and men, studying for promotion, are easily winning top marks at examinations.

Explains in Clear Understandable Form—

Fire department tools and the most effective way of using them. Proper way to raise ladders and place apparatus. Building inspection, including sketches of buildings and points to cover in fire prevention and inspection work. Dwelling fires, and how to handle them. Apartment house fires, and how to fight them. Tenement house fires, and how to fight them. Office building fires, in old and new buildings; how to place apparatus and how to handle fires. Overhauling at fires, and wetting down fires without excessive water damage. Chemicals meet with in fire service, and precautions to take. Chemical and electrical fires. Oil fires and varnish fires.

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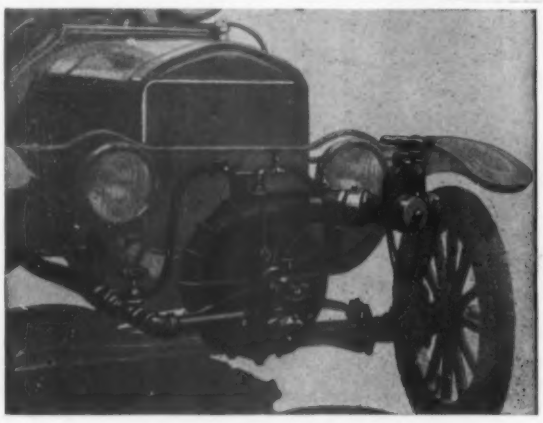

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"Gentlemen:

We are writing to inform you we are very much pleased with our Barton Fire Pump mounted on Reo Fire Truck which was purchased from you a few weeks ago. We have attended four fires and paid for the apparatus more than three times over at our first fire.

Very truly yours,
VANCE F. BARBER,
Fire Chief."

Write for complete details.

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In the manufacture of fire alarm signals, Union Water Meter Company has always realized that absolute perfection in design and workmanship are primary requirements.

Because of faithful adherence to these principles down through the years the Worcester Fire Alarm Signal has gained its high reputation.

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PROPOSED IMPROVEMENTS

Pomona, Los Angeles Co., Cal.—Chief Showman recommended to the city council the installation of fire alarm system, the building of a drill tower and the purchase of training equipment for student firemen.

San Leandro, Alameda Co., Cal.—Board of Supervisors direct clerk to advertise for bids for fire apparatus.

Sausalito, Martin Co., Cal.—Committee appointed by city council to investigate cost of fire apparatus.

Onset, Plymouth Co., Mass.—Contemplating purchase of a pumper for the fire department.

Grant, Mich.—Terry C. Mann, P. O. Box 104, wants to hear from manufacturers of small fire pumps, 150-300-gals. capacity, to be mounted on motor trucks.

Jefferson City, Colo Co., Mo.—Chief F. E. Robertson asks that city vote in favor of the $16,500 bond issue for purchase of fire apparatus.

Pawnee City, Neb.—The sum of $800 has been appropriated for the purchase of fire equipment.

New Milford, Borgen Co., N. J.—Plans for erection of new fire station have been completed

Sauquoit, Oneida Co., N. Y.—Purchase of fire apparatus approved by voters of Fire District No. 1.

Coquille, Coos Co., Ore.—Chamber of Commerce directors approve plan of fire department to purchase chemical car by raising funds.

Port Dickinson (Mail Binghamton), Broome Co., N. Y.—At recent election a $35,000 bond issue for erection of a fire station and the purchase of apparatus and equipment was defeated.

Hartford, Washington, Co., N. Y.—Funds are being raised for purchase of fire apparatus.

Oakland, Alameda Co., Cal.—City Council appropriated $3,900 for purchase of new equipment for fire department.

Grass Valley, Nevada Co., Cal.—The Volunteer Fire Department petitioned City Council to purchase a pumper.

Pittsburg, Contra Costa Co. Cal.—Funds being raised for purchase of fire apparatus. Charles Scudero, Chief of Fire Department.

Perham, Otter Tail Co. Minn.—The purchase of ladders for fire department is being urged.

Pine Island, Goodue Co., Minn.—Bids for furnishing village fire department with apparatus have been rejected. New bids may be called.

Moorhead, Minn.—N. B. Remley, Chief of Fire Dept., wants literature on Fire Alarm Steam Whistles.

Pomona (P. O. Name Pomerania), Atlantic Co., N. J.—New fire company has been formed here and station is to be erected.

Modesto, Stanislaus Co., Calif.—Mayor Elias recommends that city improve fire fighting defenses both in business and industrial districts.

Lompoc, Santa Barbara Co., Calif.—To advertise for bids for equipment to equip truck consisting of chemical tanks, hose, etc.

Wilmar, Los Angeles Co., Calif.—Ways and means of procuring possible fire protection under discussion.

Dubuque, Dubuque Co., Iowa.—Council tables petition requesting purchase of additional fire apparatus.

Easton, Talbot Co., Md.—Fire station will be erected—modern equipment throughout.

Sewell, Gloucester Co., N. J.—Department plans to purchase a combination pumper and chemical truck equipped with 900 feet of hose when funds become available.

Avalon, Cape May Co., N. J.—Ordinance introduced by Commissioner Geo. Rothacker authorizing the issuance of bonds to the amount of $15,000 for the purchase of fire fighting apparatus, including a fire truck.

McMechen, Marshall Co., W. Va.—new fire station to be erected to house the new piece of fire apartus that is to be purchased.

Racine, Racine Co., Wis.—New fire company being formed to occupy the new fire station at Kewaunee and Marquette streets.

Waunakee, Dane Co., Wis.—Fire department to petition for purchase of chassis to mount apparatus on.

Florence, Lauderdale Co., Ala.—City planning to erect a new fire station.

Rockford, Winnebago Co., Ill.—City to advertise for erection of fire station. Equipment to be purchased in the 1927 city budget.

FOR SALE
Fire Apparatus

MORRISTOWN, N. J.

Bids opened Sept. 3, 1926

The Public Safety Committee of the Town of Morristown, New Jersey, will, at the Municipal Building in said town, on September 3, 1926, at 3 o'clock P. M. (Daylight Saving time) receive sealed bids for the purchase of one 750 gallon Robinson Motor Fire Pumping Engine.

The engine may be seen at the engine house of the Humane Engine Company on Speedwell avenue, corner of Water street.

Bids must be accompanied with a certificate check for 10% of the amount of bid as a guarantee of the good faith of the bidder.

The right to reject any and all bids and to waive any irregularity in any bid, if the same does not affect the rights of the town, is reserved.

PUBLIC SAFETY COMMITTEE,
Town of Morristown,
N. C. TOMS,
Town Clerk.

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If you are looking for a profitable connection with a well-known and progressive fire apparatus manufacturer, send complete information regarding your qualifications to Box 123, c/o FIRE ENGINEERING, 225 West 34th St., N. Y. C.
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Fire Apparatus

American-LaFrance Triple Combination, Type 75. Address Box 122, % FIRE ENGINEERING, 225 West 34th St., New York City.
7-25, 10, 25.

CONVENTION DATES

Aug. 24-27—DOMINION ASSOCIATION OF FIRE CHIEFS. 18th Annual Convention, Windsor, Ont. Secretary, Chief James Armstrong, Kingston, Ont.

Sept. 1-2—MISSOURI STATE ASSOCIATION OF FIRE CHIEFS. 4th Annual Convention, Springfield, Mo., Secretary, District Chief J. T. Lynch, Kansas City, Mo.; President, Chief Horace G. Regan, St. Joseph.

Sept. 1-2—MISSOURI STATE ASSOCIATION OF FIRE FIGHTERS. 1st Annual Convention, Springfield, Mo. (Joint session, both associations, afternoon of Sept. 2) Secretary, M. J. Mulvoy, St. Louis, Mo.; President, Capt. A. J. Jones, St. Joseph.

Sept. 6—GREEN COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Labor Day, at Catskill, N. Y.

Sept. 8-10—IDAHO STATE FIREMEN'S ASSOCIATION. Annual Convention, Buhl, Idaho. President, W. E. Gelling, Rupert, Idaho. Chairman Publicity Committee, Alvin H. Reading, Buhl.

Sept. 13-15—KENTUCKY FIRE CHIEFS' ASSOCIATION. Annual Convention, Fire Department Drill School, Louisville, Ky. Secretary, Captain S. G. Render, Fire Department Instructor. 303 Speed Building, Louisville. For exhibits at State Fair, Sept. 13-18, address State Department of Fire Prevention and Rates, Frankfort, Ky.

Sept. 14-15—IOWA STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Manning, Ia. Secretary, E. E. Parsons, Marion.

Sept. 14-16—MASSACHUSETTS STATE FIREMEN'S ASSOCIATION. 47th Annual Convention, Fall River, Mass. Secretary, Daniel J. Looney, 1046 Old South Building, Boston, Mass.

Sept. 21-23—NATIONAL ASSOCIATION OF POLICE AND FIRE SURGEONS. Fifth Annual Convention in Philadelphia, Pa. Dr. Harry M. Archer, N. Y. F. D., President.

Sept. 21-24—INTERNATIONAL ASSOCIATION OF MUNICIPAL ELECTRICIANS. 30th Annual Convention, Battery Park Hotel, Ashville, N. C. Secretary, William R. Arkbuckle, Supt. Fire Alarm, Bayonne, N. J. Chairman Exhibit Committee, Daniel J. Morgan, Sales Engr., Hazard Mfg. Co., Wilkes-Barre, Pa.

Sept. 22-23—INDIANA STATE FIREMEN'S ASSOCIATION. 9th Annual Convention, Marion, Ind. Secretary, Frank H. Miller, Fire Headquarters, Terre Haute, Ind.

Sept. 24—NEW JERSEY FIRE CHIEFS' ASSOCIATION. Annual Convention, Atlantic City, N. J. Secretary, Fred A. Trowbridge, 17 South Street, Morristown, N. J.

Sept. 24-25—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Atlantic City, N. J. Headquarters, Executive Committee, Hotel Dennis. Secretary, William Exall, Chamber of Commerce Building, Newark, N. J.

Sept. 27-29—ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual Convention, Jonesboro, Ark. Date of meeting tentative. H. S Compton, secretary. Central Fire Station, Little Rock, Ark.

Sept. 27-29—KANSAS STATE FIRE CHIEFS AND STATE FIREMEN'S ASSOCIATIONS. 10th and 39th Annual Conventions respectively, Manhattan, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

Oct. 4-9—INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS. Annual Convention, Hotel Adelphia, Philadelphia, Pa. Secretary-Treasurer, Geo. J. Richardson, Rooms 105-6, A. F. of L. Bldg., Washington, D. C.

Oct. 5-7—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. Annual Convention, Philadelphia, Pa. Secretary Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 12-15—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 33rd Annual Convention, Fresno, Cal. Secretary, Chief Jay W. Stevens, 1014 Merchants Exchange Building, San Francisco, Cal.

Oct. 19-22—INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS. 54th Annual Convention, Hotel Roosevelt, New Orleans, La. Exhibits at U. S. Army Base Bldg., Dauphine and Poland Sts. Secretary, Chief James J. Mulcahy, Yonkers, N. Y. Chairman Exhbit Committee, Chief Wm. F. Daley, Brockton, Mass.

Oct. 20—OFFICERS' ASSN. FIRE PATROLS, SALVAGE CORPS AND PROTECTIVE DEPTS. OF U. S. AND CANADA. Meeting at New Orleans in connection with I. A. F. E. Convention. Secretary, John Ashmead, 76 William St., New York City.

Jan. 18-20, 1927—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. 45th Annual Convention, Columbus, Neb. Secretary, H. A. Webbert, Kearney.

N. Y. Converting Fireboats to Oil Burners

New York City is now engaged in converting two of its best fireboats from coal burners to oil burners. The contract has been awarded to the Tod Ship Building Corporation for $49,000.

New York has one oil burning fireboat now among its fleet of ten fire floats. That oil burner, the "John Purroy Mitchel," built in 1921, is the latest addition to the fleet.

The two boats now being converted, one at a time, are the "James Duane" and the "Thomas Willett" her sister ship, both built in 1907 at a cost of $125,000 each.

Both vessels are 131 feet long, 27 foot beam, 10 feet and six inches draught, 326 tons gross, 222 tons net, each of 900 horsepower and each of 9,000 gallons capacity.

It is believed that oil burners are more economical than coal, especially when idle at the dock, between runs.

W. J. DALY.

Boy's Shot Causes Large Fire Loss.—A spark from a blank cartridge pictol fired by a boy into an empty gasoline storage tank resulted in a $60,000 loss in a wholesale grocery warehouse. The boy was badly burned. The boy fired the cartridge into the barrel to see how it would sound.

FALSE ALARMS

WILL THE ORDER SPREAD?

The firemen of Denver, Col., are wondering if the idea suggested by Edwin D. Barry, safety director of Cleveland, Ohio, will spread to their fair city.

The men say that there is too much washing as is, without taking additional

instruction in the subject, and there is nothing in the rule book about the technical side of a washing machine.

The men would much rather, if such a practice was necessary, resort to the common wash tub. There is no mechanism in it that can trouble them, and when not in use, it can be inverted and used for a pinochle table.

If Cleveland wants to operate a laundry of red-shirted firemen, that is the city's affair, but the Denver men are sitting up nights hoping that there will always be a first class department of firemen there.

BUT DON'T TRY IT

New York is the most inhospitable city in the world.

I speak from experience.

The first day I was there I stopped to look at a little red box on Broadway and read the raised letters:

"Break glass. Turn key to right. Open door. Pull down lever."

I followed instructions. Within two minutes I had checked the arrival of the following:

3 pumps, motor driven.
8 combination chemical and patrol cars.
3 ladder trucks.
2 ambulances.
5 battalion chiefs.
67 press cars.
45 insurance adjusters.
187 lawyers.
567 dogs.
10,874 dumb-bells, both sexes.
1 fire chief.

They all looked at me.

"Chief," I said, for I did not want to seem unappreciative, "as a stranger in your fair city let me bid you welcome to this corner."

"Thank you," he replied. "This is an unexpected pleasure."

"Don't mention it, old-timer," I comforted him, for he seemed rather embarrassed. "Before I launch into my address, however, let me assure you that the fame of your brave department is known even as far as Prune Corners, from whence I come."

"Sir," he replied in the same happy vein. "You come as a friend; it was my privilege, at the last fire chiefs' convention, to meet your efficient fire chief."

"I shall send him a postcard as soon as I get located, and tell him I saw you," I continued. "This is a wonderful city. It is, I can see, in fact, a progressive city. Who would have thought, fifty years ago, sir, that by the simple device of pulling a lever in yon scarlet box one might within a few seconds assemble such an energetic, efficient and highly intellectual gathering as I see around me at this moment?"

This was greeted with a tremendous cheer.

"I am reminded," began the chief, now more at ease, "of the story of Pat and Mike."

"I beg you stop," I interrupted. "I have heard that one. Besides, chief, this is a serious occasion. I fear I have already taken up more than the time allotted me. I realize you and our hospitable audience—and I can see from one sweeping glance that they are nature's true noble men and women—may have other work to do. Perhaps there are others who, even now, are awaiting your arrival anxiously while hungry, lurid flames lick their humble homes and frantic mothers ,with prattling babes plead pitifully from windows, cut off by fire from the streets below."

There was the rumble of many strong throats being cleared and tears glistened in the eyes of thousands.

When the chief was able to speak again his voice was choked with emotion.

"My friend," he said in a low, strained tone. "You will never know what you've done and how much these few moments have meant to all of us. Before we leave, may I ask if we can be of service?"

Before I could reply a pessimistic looking gentleman sitting over the rear axle of a long ladder truck growled rudely:

"Well, where's the fire?"

"Ah, yes!" beamed the chief. "Is there, by any chance, a fire in this vicinity?"

"I do not think so," I said, "I merely summoned you to ask if you could direct me to a hotel where I might get a good, clean room and a fair cup of coffee."

"Well, let me see," he began, "there's the Carlt-Ritzton and the Aldorf-Wistaria. I've heard they have pretty nice rooms, but I don't know much about the kind of coffee they brew. Say, I'll tell you: Why not run out to my house for a day or so? The wife'll be glad to have you visit with us until you get settled."

I accepted readily, for he seemed a decent sort.

"Wonderful!" he cried. "As soon as I get back to headquarters I'll phone the wife to buy thirty cents worth of round steak tonight. We have dinner about seven. That's all right? Fine. We'll expect you. And if you think of anything you want in the meantime, just turn in another alarm and some of the boys will show up in a minute or two."

We shook hands heartily. Scores of cameras clicked and then, still waving affectionately to me, the chief and the rest of the city untangled themselves and drove away.

For several hours I had a pretty good opinion of that fire chief. But when I began to feel hungry and decided to go up to his house, it dawned on me that he was an ungrateful, double-crossing four-flusher. After all the trouble I'd gone to to make him feel at ease when he answered that alarm, and after he'd invited me to be his guest, the darned bone-head had driven away without telling me where he lived!—*Judge*.

WHY SHOULD HE!

While the self-elected chief of one of the outlying companies in an Oklahoma town was preparing the meal for the fire company, a wind storm of such violence came up that one of the men who was lounging on the porch rushed to the kitchen for protection.

Feeling somewhat secure from the storm, he looked around and noticed that the cover was off the soup pot.

"Hey, there you," he shouted to his comrade, "the cover should be put on so that the dust will not get into the soup."

"That's none of your affair. You're working for the city."

"Yes," replied the fireman as he sauntered out, "but I am not supposed to eat it."

A SOFT ANSWER

Those who are planning to visit Havana on the return from the I. A. F. E. convention at New Orleans this year, will do well to bear in mind the story told about one of the delegation who made the trip on a previous convention trip there.

The boat was rolling incessantly, and as is usually the case, one of the passengers, a salesman of fire apparatus, was disgustingly healthy.

Leaning over to his neighbor who was posed at the rail and whose complexion had assumed a pale-green hue, he remarked, "Sick, eh?"

The sick one regarded his neighbor scornfully and replied somewhat weakly, "Sick nothing! I'm just hanging over the rail to see if the captain cranks the boat like you do your fire trucks."

The chiefs who attended the convention of the New England Association of Fire Chiefs may have failed to make the acquaintance of the chief of the "Darktown" Fire Department. The photograph is published at this late hour to correct a social error of the Editor.

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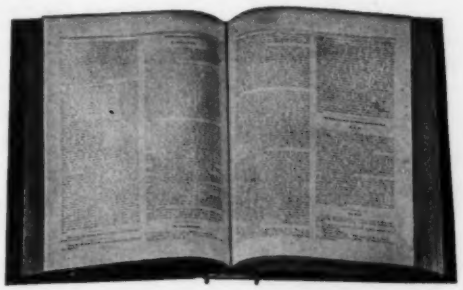

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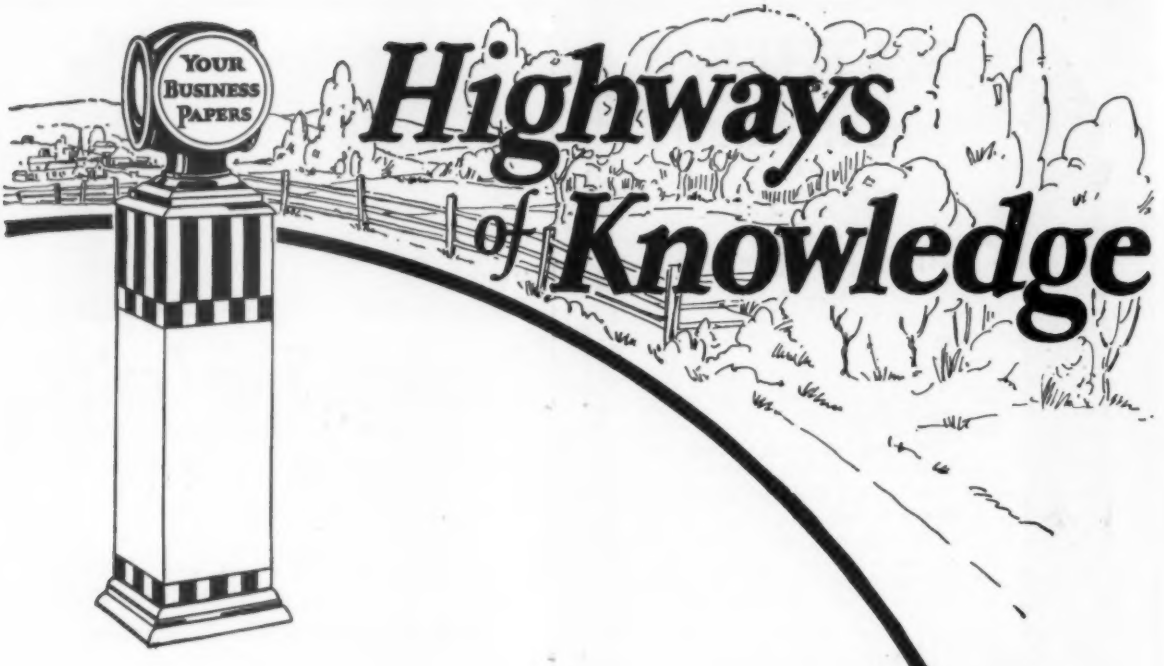

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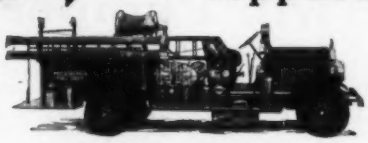

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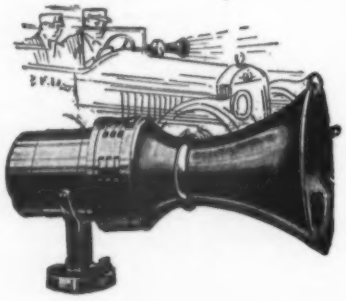

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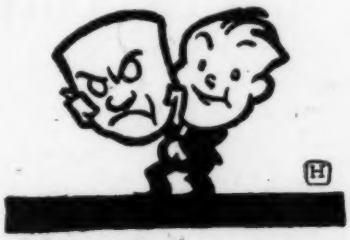

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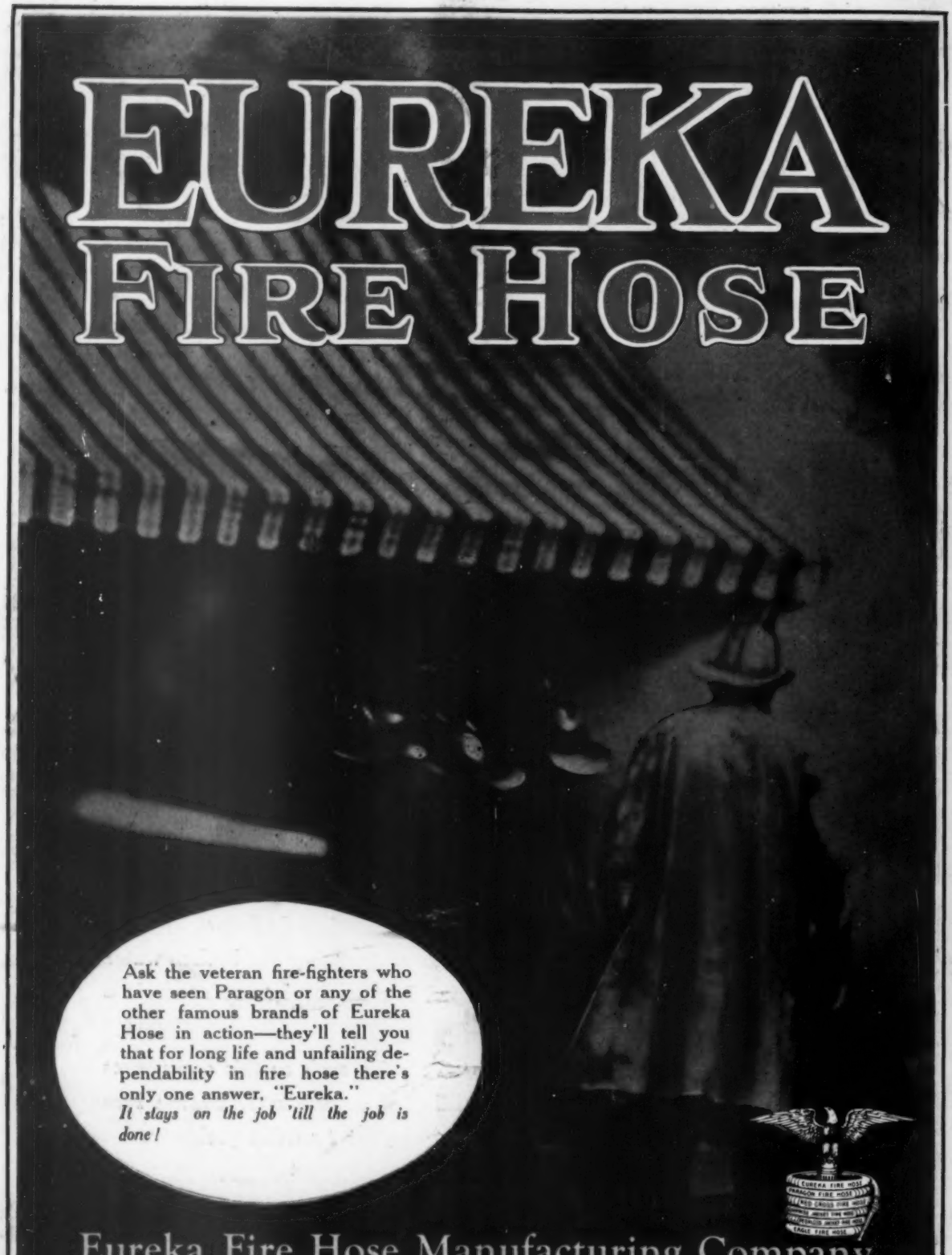

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